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PROTOZOAN INFECTION OF THE HUMAN BOWEL

A COMPARISON OF LABORATORY AND CLINICAL OBSERVATIONS *

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The relation of human intestinal protozoan infection to disease is a subject that has attracted considerable attention in recent years but as yet has not reached a satisfactory solution. One still finds, on the one hand, a few of the older school who regard infection with *Endameba histolytica* as of no consequence unless associated with acute amebic dysentery or liver abscess. On the other hand, one finds a group who not only attribute many gastro-intestnal disturbances to protozoan infection but also ascribe certain systemic and metabolic disturbances directly to intestinal protozoa.

While these extreme views undoubtedly have been proposed merely as a working hypothesis by those with whom they originated, they have been the means of bringing considerable discredit to the subject of amebiasis in general, in that they have been interpreted by some as having been firmly established. As a consequence, some opponents of the systemic idea have come to regard primary amebic infections in the same negative way that they regard systemic amebiasis. This is indeed unfortunate, for as a result many important cases of intestinal amebiasis have been overlooked.

The whole subject of intestinal protozoiasis, including amebiasis and flagellosis, is in need of further accurate investigation by unprejudiced persons and should be approached from four main angles:

1. Careful histories should be taken of all cases in which laboratory observation reveals protozoa in the stool. These histories should be taken by the unbiased with the express idea in mind of finding, if possible, some cause other than the protozoa to explain the symptoms. In the past it has been far too common an occurrence for a clinician to accept a positive laboratory report of some intestinal protozoan as indicating that the protozoan was actually the cause of the patient's trouble, and treatment has been instituted accordingly, often to the neglect of the real cause of the ailment. Only when other causes have been ruled out, and the protozoa remain as the only etiologic factor, is the clinician justified in assigning the disturbance directly to the intestinal protozoa.

2. Careful laboratory data should be obtained in order to rule out bacterial disturbances, such as tuberculous enteritis and bacillary dysentery.

3. Careful autopsy records and histologic sections should be procured when lesions and disorders are thought to be of protozoan origin.

4. The experimental method should be employed in establishing experimental protozoiasis in suitable animals; e. g., amebiasis, trichomoniasis and giardiasis in puppies and kittens. Monkeys may also be used for observation in the more chronic types of protozoiasis.

One of us (Kessel and Willner [1] and Kessel [2]) has been interested for some time in experimental protozoiasis and also in a thorough correlation of laboratory and clinical observations on this subject. While he was on the staff of the Peking Union Medical College a plan of cooperation between the laboratory and the medical service was worked out with the medical staff and was employed to advantage. The results of this study have never been published since the clinical summaries were not completely tabulated before leaving Peiping two years ago. However, in the General Hospital in Los Angeles opportunity has been afforded for continuation of the study, and the present summary is the first that has been compiled.

TABLE 1.—*Incidence of Protozoan Infection in California as Compared with Several Other Surveys*

	Number of Cases	Average Examinations per Case*	E. Histolytica	E. Coli	E. Nana	Iodameba	Councilmania	Giardia	Chilomastix	Trichomonas
Boeck and Stiles (1923) U.S.P.H.S. Hospitals	8,629	...	8.0	28.0	23.0	7.5	....	10.3	9.6	...
Kessel (1924-1927) Peking Union Medical College.....	7,000	3+	16.3	10.8	21.4	4.8	8.2	5.3	1.6	3.1
Svensson (1928) Sweden and Finland, hospitals and outpatient departments.....	770	1	3.0	15.0	10.5	2.4	....	5.3	1.6	...
Kofoid (1926) California State Board of Health.....	6,834	3.3	13.1	3.4	24.4	2.3	17.7	5.2	6.6	2.6
Kessel (1929) Los Angeles General Hospital.....	2,731	3	9.8	15.2	16.9	3.2	3.4	4.4	8.3	5.9
Reynolds† (1928) College of Medical Evangelists (California)...	1,000	4	16.0	6.0	21.0	7.2	19.1	3.7	20.9	5.8

* Estimated.

† Unpublished data furnished by Dr. Reynolds of the College of Medical Evangelists.

* Read before the Section on Practice of Medicine at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 12, 1929.

1. Kessel, J. F., and Willner, O.: Some Clinical and Laboratory Aspects of Amoebiasis with a Preliminary Report on Yatren Treatment, China M. J. **39**: 383-396 (May) 1925.

2. Kessel, J. F.: Amoebiasis in Kittens Infected with Amoebae from Acute and Carrier Human Cases and with Tetranucleate Amoebae of Monkey and of Pig, Am. J. Hyg. **8**: 311-354 (May) 1928.

The results show the importance of thorough examination of stools for bacteria and protozoa in hospitals in the United States, especially in regions situated in the warmer climates, and represent a successful departure from ordinary hospital routine.

SOURCE OF MATERIAL AND METHODS

In a study of the type here recorded, the greatest cooperation between clinical and laboratory departments is required. This is necessary (1) in the collection of fecal samples for laboratory examinatoin, which must be observed fresh, (2) in taking proctologic smears for culture, and (3) in procuring the salient points in the patients' histories.

Date

CLINICAL OBSERVATIONS		LABORATORY OBSERVATIONS
Previous residence		GASTRO-ANALYSIS
Previous diseases		
Clinical Dysentery	When	BARIUM ENEMA
Blood		
Mucus		Gastro-Intestinal Series
Intermittent diarrhea or constipation	How long	Emptying Time: Stomach, Ileum, Colon; Duod., Cecum
Abdominal tenderness or pain	Subjective Objective	Other Observations
Nausea		
Vomiting		Diagnosis
Gas		BLOOD
Gallbladder		Hgb. Col. Ind. Eryth. Poly. Neut. L. Mon. Leuk. Lymph. Eosino. Baso. Trans.
Liver		WASSERMANN
Appendix		
Proctosigmoidoscopic Observations	Pruritus ani Hemorrhoids Ulcer Fissure Fistula	URIN:
		STOOL
		Consistency Blood Mucus
Other disorders of the digestive tract		Crystals: - Charcot-Leyden Fatty acid
Temperature		AMOEBAE / FLAGELLATES / RELIGIOUS
Teeth		E. dysent. / Chilomastix
Tonsils		E. nana / Trichomonas
Arthritis		E. coli / Giardia / Yeasts
General Malaise		Others / Others / Blasto
Loss of Weight		Bacteriologic
Other Clinical Observations		Culture of Stool Follow-up examination after three months
Clinical Diagnosis		
TREATMENT		
Any previous treatment for parasites		
Present treatment and dosage		
Stool negative after how many days		
Conclusions concerning treatment:		Clinical / Microscopic observations
		Service of
Surname of Patient	First Name / Middle Name / Age / Patient No. / Ward No.	

History sheet for protozoan cases.

We feel that the present study yields especially fair conclusions because the laboratory observations and clinical observations have been made by independent workers. Further, histories have been taken by independent internists on different services and have merely been summarized and the facts correlated by us. There has thus been little opportunity for prejudiced conclusions.

SOURCE OF PATIENTS

The hospital patients in this study were all ill and came to the hospital for advice. Apart from 18 per cent who were Mexicans, most of them did not give a history of residence outside the United States.

Of the series here studied, 60 per cent of all groups presented gastro-intestinal symptoms and stool examinations were made as part of the routine. In this large group there are included those exhibiting actual dysentery or diarrhea, constipation with and without vague abdominal distress, the so-called functional neuroses of the gastro-intestinal tract, the definite lesions of the gastro-intestinal tract, and diseases with secondary gastro-intestinal manifestations, such as pellagra or tabes. It also included a number of patients under par in whom a definite and satisfactory diagnosis, apart from colitis, could not be made in many instances.

A small group of arthritic cases has been observed. The correlation of *E. histolytica* infection with arthritis is small in our series thus far, but we feel that we have an insufficient number to warrant conclusions, and, since further studies are being made on this subject, the data will be withheld for later presentation.

LABORATORY METHODS

Standard laboratory methods have been employed for the detection of bacteria and protozoa. For the differentiation of *Bacillus dysenteriae*, standard sugar reactions and agglutination tests were employed. In examination for protozoa, a combination of the fresh smear method with saline solution and iodine-eosin and the permanent smear method in Haidenhain's iron-hematoxylin has been used throughout. In addition, a large percentage of the fecal samples have been subjected to the culture method in the standard Ringer's-egg-serum medium. In a few cases known to be positive and others to be negative for *E. histolytica*, the complement fixation method described by Craig [3] was employed. The results were promising, though not conclusive in all cases.

Table 1 shows the incidence of hospital protozoan infection in California as compared with several other hospital surveys of importance and the California State Board of Health report. The estimated summary of Boeck and Stiles [4] for hospitals in the United States is purely relative since the results are obtained from a variety of sources without the employment of standardized methods. Since similar methods have been employed in the other surveys, they are comparable except for the fact that the average number of examinations per case varies in the different surveys. This is especially low in the results of Dr. Svensson [5] in Sweden, as she records only a single examination per patient. If her figures had been compiled following three examinations per case her results would probably have been doubled, at least for *E. histolytica*. Several interesting comparisons may be drawn from a study of this table:

1. Svensson's report is further evidence that the intestinal protozoa are not confined to the tropics but are found in fairly high percentages even in countries as far north as Scandinavia.

3. Craig, C. F.: Complement Fixation in the Diagnosis of Infection with Endomoeba Histolytica. Am. J. Trop. Med. **8**: 29-38 (Jan.) 1928.

4. Boeck, W. C., and Stiles, C. W.: Studies on Various Intestinal Parasites (Especially Amoebae) of Man, Bull. 133, Hyg. Lab., U. S. P. H. S., 1923.

5. Svensson, R.: A Survey of Human Intestinal Protozoa in Sweden and Finland, Parasitology **20**: 237-249 (Oct.) 1928.

2. The reports by Kofoid, Kessel and Reynolds compare favorably and show that the incidence of intestinal protozoan infection in California is higher than the estimated incidence of infections by Boeck and Stiles [4] in hospitals throughout the United States.

3. Incidence of protozoan infection is on the whole lower in Los Angeles General Hospital than in the Peking Union Medical College Hospital. *E. histolytica* is 6.5 per cent lower. *Chilomastix* and *Trichomonas*, however, are slightly higher in Los Angeles. Kofoid [6] and Reynolds (1928) show a low incidence of *E. coli*

TABLE 2.—*Comparative Value of Smear and Culture Method in Laboratory Diagnosis for Intestinal Protozoa*

Infection	Total	Smear + Culture +	Smear + Culture −	Smear − Culture +
E. histolytica	77	32.4%	64.8%	2.6%
Chilomastix	164	59.7	9.1	31.1
Trichomonas	160	54.3	3.1	42.5

and a high incidence of *Councilmania lafleuri*, while Kessel (1929) shows a higher incidence of *E. coli* than of *Councilmania lafleuri*. These figures demonstrate that the personal factor enters into the differentiation between *E. coli* and *Councilmania lafleuri*, Kofoid preferring to give the benefit of the doubt in slightly dispersed karyosomes to *Councilmania*, while we prefer to designate as *Councilmania* only those protozoa having nuclei with definite, heavily dispersed karyosomes and conclude that the karyosomes showing slight dispersion are merely division stages of *E. coli*. Otherwise, one will find many mixed cases of *E. coli* and *Councilmania* and will note considerable variation from day to day in the same patient.

4. Boeck and Stiles show an incidence of *Giardia* infection of 10.3 per cent while all the other surveys show a much lower incidence of infection with *Giardia*.

Table 2 shows the comparative value of the common smear and cultural method in Ringer's-egg-serum medium for *E. histolytica*, *Chilomastix* and *Trichomonas*. In this series it will be seen that the smear method is more effective in detecting *E. histolytica* than the culture method and that as a result of the culture method only 2.6 per cent of cases were detected which otherwise would have been overlooked.

Chilomastix and *Trichomonas*, however, present quite a different picture and show that 31.1 per cent of the cases were detected by culture which were overlooked by the smear method, and 42.5 per cent of *Trichomonas* cases were diagnosed positive by the culture method which were not previously observed by direct smear. St. John [7] shows much more promising results in the employment of the culture method for routine diagnosis of amebiasis. One wonders whether his later experience has verified his earlier conclusions and whether he employs the culture method in preference to the smear method.

VALUE OF BACTERIAL CULTURE IN PROTOZOIASIS

The question of performing bacterial cultures in cases found to be positive for intestinal protozoa cannot fail to impress one as being of value in regions where epidemics of bacillary dysentery are common. Bacteriologic culture was performed as a routine in cases of amebic dysentery in Peiping, where the ratio of bacillary dysentery to amebic dysentery was about ten to one.

6. Kofoid, C. A.: Statistical Summary of Persons Examined for Protozoa, in California State Board of Health Twenty-Ninth Biennial Report, Sacramento, Calif., California State Printing Office, 1926, p. 93.

7. St. John, J. H.: Practical Value of Examination for Endamoeba Histolytica by Culture, J. A. M. A. **86**: 1272 (April 24) 1926.

Knowles [8] has also raised the question of a possible relation between acute amebiasis and streptococcus infection, and also the question of whether diarrheas in which *Trichomonas* were found were not actually caused by *B. dysenteriae* rather than by *Trichomonas*.

In this country, where bacillary dysentery is relatively rare, one would question the merit of performing a routine bacteriologic culture in all positive protozoan cases. However, in order to collect accurate data on this point, such a routine was established. Instead of cultures being taken only of the stool for bacteria, smears were made whenever possible at the time of proctoscopic examination and cultures of these smears taken for bacteria.

Table 3 shows the bacteriologic cultures yielded by fifty-nine cases of *E. histolytica*, thirty-three cases positive for *Giardia*, forty-three cases positive for *Chilomastix*, and forty-eight cases positive for *Trichomonas*. It will be seen that gram-positive cocci, either streptococcus or the gram-positive diplococcus of Bargen, have been found in a few instances and also that *B. dysenteriae* has been present, most commonly in *Giardia* infections, in children.

However, the correlation of protozoan and bacteriologic infection was not sufficiently high to obscure or make negative the pathogenic rôle of the protozoa.

During the period of this investigation, sixty cases of *B. dysenteriae* Flexner, Shiga or Morgan have been detected in the Los Angeles General Hospital. Of these three have also been positive for *E. histolytica*, five for *Giardia*, three for *Chilomastix* and two for *Trichomonas*.

In a series of cases negative for intestinal protozoa, used as controls, *B. welchii* showed a similar incidence to that found in the series recorded in table 3. This would indicate that there is no special correlation between this organism and intestinal protozoan infection.

CORRELATION OF INTESTINAL PROTOZOA WITH CLINICAL MANIFESTATIONS

In this study, just as soon as a positive laboratory observation for some intestinal protozoan was obtained, a report of it, together with a copy of the accompany-

TABLE 3.—*Percentage of Positive Bacteriologic Observations Among Patients Harboring Intestinal Protozoa*

	Number of Cultures	Gram-Positive Cocci, Streptococcus or Bargen Diplococcus	B. Dysenteriae, Shiga-Flexner, or Morgan	B. Proteus, B. Alcaligines and B. Paracoli	B. Welchii
E. histolytica	59	7%	7%	11%	21%
Giardia	33	None found	10%	15%	5%
Chilomastix	43	5%	6%	12.5%	14%
Trichomonas	48	5%	5%	8%	14%

ing history sheet for protozoan cases, was sent to the ward. As much special work, e. g., gallbladder dye series, proctoscopic examination, gastro-analysis and roentgenograms of the gastro-intestinal tract series, was accomplished in every case as was consistent with the case in question.

Tables 4 and 5 have been compiled from a study and classification of the data derived from patients' histories.

In this series ten cases have shown a typical tropical or amebic dysentery and amebas have been detected in the pus from typical amebic liver abscess in four other cases. Such cases give no doubt as to their origin. It

8. Knowles, R.: An Introduction to Medical Protozoology, Calcutta, 1928.

with the acute inflammatory process, sometimes associated with a chronic process, and sometimes present without any demonstrable microscopic evidence of inflammation. It led me to consider whether the so-called harmless type of protozoan occasionally present in the intestinal contents was as harmless as we seemed to believe because of the absence of invading power. I have noticed this: If individuals who have a tendency to allergy happen to carry the so-called harmless types of protozoa, they have eczema and their nervous system is extremely upset. I recall more than one case in which the patient complained only of nervousness and I found the intestinal contents heavily charged with flagellates. As soon as the flagellates were removed, the individual's condition was improved. As to the relationship of climate to protozoal infestations, we find them in Memphis in large numbers. Individuals harboring animal parasites have low metabolic rates. The cutaneous manifestations of the host of protozoal infestations are often confusing. It has been my experience that one can demonstrate eosinophilia in the host of animal parasites. The percentage of eosinophilia varies with the hypersensitive state of the individual. As to the identification of the protozoa, I have used Dr. Craig's improved culture method and have been able to cultivate the flagellates, and also the amebas, but not as often as I am able to pick them up in the moist mount in smear. I employ vital staining and use a mixture of glycerin, iodine and eosin stain before I fix them. I am fairly successful in identifying them in this way.

DR. FRANK SMITHIES, Chicago: We are living in an age of so-called colitis. Some one recently said that for all his patients the diagnosis of colitis was advanced in 40 per cent. The authors have emphasized one important point, namely, that when a diagnosis of "colitis" is made it should not be the end but the beginning of the investigation, because in a number of these chronically recurring instances of "colitis" we deal with protozoic infestations of the bowel or some of its associated appendages. One has been mentioned by Dr. McIntosh—the appendix. I have already placed on record thirty instances of parasitosis of the biliary passages and the gallbladder in which, at the time of operation, I found the same protozoa in the gallbladder contents that I found on duodenal drainage. These were instances of frequent recurrences after the parasite had been eradicated from the alimentary tract. We should get out of our minds the idea that amebiasis means "dysentery." When the individual carries the protozoa in the encysted stage, he may have no symptoms whatever. Yet that individual, when the cysts develop to vegetative organisms, has definite evidences of active colitis, frequently associated with diarrheic stools or actual diarrhea. The reason California boasts many of these conditions is that observers have been looking for the parasites. They are widespread. Amebic colitis in Eskimos has been recorded. In cities adjacent to rural communities one has no difficulty in finding intestinal protozoa. We have found about 300 instances among 3,600 patients. Many of these patients were being treated for "colitis" by vaccines, serums, diet and medicines. The infestation is largely spread by carelessness about drinking water and by the free ingestion of raw roughage and fruit. As a result of the publicity emanating from sanatoriums and newspaper "health" columns, there are many roughage eaters. These roughage eaters are potential manure eaters, because garden truck is contaminated during growth by the dejecta of barnyard animals, or by impure water. The problem which we are facing with regard to the treatment of patients is serious; not only is there "colitis" but instances occur in which the colon has become scarred, deformed and deficient in function after the organisms have been eradicated. Systematically, the liver, the brain, the testicles, the joints and various parts of the body may be affected. The stools are negative, but the parasitosis and its consequences remain.

DR. J. F. KESSEL, Los Angeles: Dr. McIntosh has collected some interesting data, and I should judge has a fertile field in his part of the country for further investigations of significance. Dr. Smithies' experience apparently leads him to accept the conclusion that most of the intestinal protozoa are pathogenic and that they may produce secondary systemic infections as well as primary foci of infection. Although we recognize the importance of the rôle played by certain of the intestinal protozoa in disease and have tried to emphasize what we consider to be some of the significant points in our paper, our experience has not led us to accept as proved all of the generalizations indicated by Dr. Smithies. There are two points in our paper which I should like to clarify. The first concerns the meaning we have given to the word "infection." We have used infection to mean the establishment of parasites within a host without reference to disease conditions which may or may not result. Such parasites may multiply within the host; for example, protozoa multiply within the intestinal tract. Infection is thus differentiated from infestation, which indicates a condition in which organisms are harbored and do not multiply within the host; for example, hookworm does not multiply in the intestinal tract. Second, with reference to the pathogenicity of flagellates, we do not want to give the impression that we have said definitely that the intestinal flagellates are pathogenic. In a certain percentage of instances they are associated with cases that present clinical symptoms, and the evidence of the past is certainly just as strongly in favor of their pathogenicity as it is in favor of their being nonpathogenic. The question, however, is still open for consideration and needs investigation. I think it should be investigated together by the clinician, by the pathologist, and by the experimentalist. In some of my experimental work in kittens, I have observed invasion of trichomonads into the tissue. In other cases, however, there was no tissue invasion but merely a necrosis and catarrhal inflammation of the mucosa. I have also seen an autopsy in the Los Angeles General Hospital in which trichomonads were present in great numbers and in which the cecum presented the characteristic mucoid condition just described for kittens. There was, however, no invasion of the tissue by the flagellates. Wenyon, on the other hand, has found invasion of trichomonads into the human bowel, although he suggests that the invasion may have been the result of postmortem change. I do not think that we have sufficient evidence collected to make a definite statement concerning the pathogenicity of the flagellates.

ASTHMA DUE TO A FUNGUS—ALTERNARIA *

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Cooke [1] was probably the first to emphasize the importance of dust as a cause of asthma. In 1922 he reported that in 327 cases of asthma a reaction to dust of diagnostic importance was found in 109, or 33 per cent. He found the activity of the dust was diminished when it was heated at 100 C. in a sealed tube and was destroyed when it was boiled in an open vessel. He was unable to correlate this reaction in his patients with their sensitization to known constituents of dust. He states in his conclusions: "The new procedure of testing dust extracts . . . has shown the presence of a substance in common house dusts which is an important factor but the nature and source of which are as yet unknown."

Cooke's observations on the frequency of dust sensitiveness in asthma have been abundantly confirmed. McLaughlin [2] reported that, of 1,186 patients, 63 per cent were dust positive and 126 reacted to dust alone. Rowe [3] reported 160 cases, of which 42 per cent were dust positive. He thought the reactions were probably explainable by the presence in the dust of such substances as animal dander, hair, orris or glue and

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1. Cooke, R. A.: J. Immunol. **7**: 147 (March) 1922.
2. McLaughlin, J. S.: Skin Tests in Patients with Asthma, J. A. M. A. **89**: 663 (Sept. 10) 1927.
3. Rowe, A. H.: House Dust in Etiology of Bronchial Asthma and of Hay-Fever, Arch. Int. Med. **39**: 498 (April) 1927.

that there was probably no substance present specific for dust.

Storm van Leeuven,[4] in developing his theory of climate or "miasma" as a factor in asthma, reports experiments in which grain infected with *Aspergillus fumigatus* or with *Penicillium* produced anaphylactic symptoms or even death in guinea-pigs exposed to it at times after the first exposure. He also observed that penicillia and aspergilli were absent from the air in the localities in which asthmatic persons were free from attacks. He suggests that the influence of locality may be due to the bacteria, yeasts and molds growing there but attributes the attacks of asthma to substances produced by these saprophytes rather than to the organisms themselves.

The first definite proof of the causation of asthma by fungous spores was apparently brought by Cadham.[5] In 1924 he reported three cases in workers in wheat fields due to the spores of the wheat rust (*Puccinia graminis*). The spores gave a positive skin reaction in these cases and "a whiff of a few rust spores was sufficient to induce a paroxysm."

In 1928, Hansen[6] reported a number of cases in which asthma could be incited by spores of molds which he cultivated from the surroundings of the patients, who also gave skin reactions to extracts of the fungi. The species to which he found patients sensitized were *Aspergillus fumigatus, Asperigillus glaucus* or *Aspergillus nidulans,* and *Penicillium "glaucum."* He describes, however, a patient who had asthma whenever a certain cat entered the room. He cultivated *Aspergillus niger* from the cat's fur and the patient gave a strong skin reaction to an extract of its spores.

REPORT OF CASE

A man, aged 37, had been subject to frequent attacks of asthma, which began following a severe bronchitis in childhood. For the past twelve years he had had also a persistent eczema of the hands and feet which had recently involved the lower leg. His father was a leather dealer. He remembered that, in his boyhood, contact with hides brought on asthmatic attacks. He had always associated these attacks with the smell of musty but not putrid animal material. The patient was a mechanical engineer, and he had noticed that when his machinery was cleaned he had no trouble if washed rags were used but was apt to have an attack if the cleaners used unwashed rags. He had also had attacks on entering old damp houses or antique shops and associated these attacks with the smell of musty carpets. He had been often able to predict that he would have an attack in a certain room or house by the smell when he entered. He invariably had an attack on entering a stable or a menagerie, but contact with horses in the open did not cause symptoms.

His attacks of eczema and asthma had not always coincided. On his return to a house where he had had severe attacks of asthma, the eczema also flared up, but on his moving to another house the asthma was relieved but the eczema was uninfluenced. Repeated examinations of the skin from the lesions between his toes and on his hands had not shown pathogenic fungi. On three occasions, however, cultures from a patch of eczema on his ankle gave a growth of *Aspergillus nidulans.*

During a sea voyage both the asthma and the eczema cleared up entirely.

The patient's condition had been thoroughly studied previously from the point of view of sensitization. Intradermal tests showed a definite reaction to several foods, abstinence from which was tried without influencing the attacks. Intradermal tests were positive also to tobacco, insect powder, orris, horse epidermis and dust. He reacted to an extract of dust from an office where he worked. Attacks of asthma did not occur after the use of tobacco or orris or on contact with horses.

The history otherwise was irrelevant. An infant son has eczema; the patient's grandmother had asthma. Physical examination did not reveal anything of significance.

At the time our observations were begun, the patient had returned to the old family house in the suburbs, a place where he was always subject to attacks. On going into the damp cellar to remove some trunks he had a very severe attack. A few weeks later, on unpacking these trunks in a new apartment, where he had been free from asthma, he had another similar attack.

Knowing that he was sensitive to dust and especially to dust in places where molds grew, we exposed plates of Sabouraud agar in this cellar. Four species of fungi were recovered and intradermal tests were made with phenolized suspensions of the cultures. He gave a strong reaction to one of these, *Alternaria* 1305, certain species of which fungus cause well known plant diseases; among them the early blight of potato (*Alternaria solani*), Ginseng blight (*Alternaria panax*) and apple leaf-spot disease (*Alternaria mali*). Other species grow saprophytically on decaying organic material and their spores occur in dust along with those of the common molds.

TABLE 1.—*Intradermal Reactions*

Fungus	Source	Preparation	Nitrogen per 100 Cc. or Dilution	Result
Alternaria 1305	Cellar	Carbon dioxide extract	N = 0.25 mg.	Positive
Alternaria 1305	Cellar	Filtered broth	1=10,000	Positive
Alternaria 1305	Cellar	Spore suspension	.....	Positive
Pachybasium (species?)	Cellar	Spore suspension	.....	Doubtful
Spicaria (species?)	Cellar	Spore suspension	.....	Doubtful
Penicillium (species?)	Cellar	Spore suspension	.....	Doubtful
Penicillium 1219	Cellar	Carbon dioxide extract	N = 55 mg.	Positive
Paecilomyces varioti	Room	Carbon dioxide extract	N = 1 mg.	Positive
Paecilomyces varioti	Room	Carbon dioxide extract	.....	Positive
Penicillium 1229	Room	Carbon dioxide extract	N = 1 mg.	Positive
Trichoderma köningi	Room	Carbon dioxide extract	N = 1 mg.	Doubtful
Circinella spinosa ? 1462	Room	Carbon dioxide extract	N = 69 mg.	Negative
Aspergillus nidulans	Lesion on leg	Carbon dioxide extract	N = 0.7 mg.	Positive
Cephalothecium roseum.	Stock	Carbon dioxide extract	N = 0.8 mg.	Positive
Aspergillus niger	Stock	Carbon dioxide extract	N = 55 mg.	Negative

The patient was then caused to inhale a powder prepared by drying and grinding the washed felt from an old broth culture of *Alternaria* 1305. This incited a typical paroxysm of asthma which required relief by ephedrine and which recurred at intervals for twenty-four hours.

This seemed to prove that some of the attacks of asthma were due to sensitization to this fungus. It remained to be shown whether other molds had a similar effect and it seemed of interest to determine what type preparation was most satisfactory for testing. Intradermal tests with the culture mediums used were negative, but in order further to exclude this factor extracts were made by taking the felt from the old cultures on maltose broth, washing it, placing it in a mortar with carbon dioxide snow and sand, and grinding the frozen fungus to a fine powder. This powder was then extracted by adding a fluid containing 1 per cent normal sodium hydroxide, 0.9 per cent sodium chloride and 0.5 per cent phenol (carbolic acid) and heating to 56 C. for one hour. The extracts were filtered through Berkefeld candles and tested for sterility. Their nitrogen content was determined by a micro-Kjeldahl method. The results of some of our numerous experiments are summarized in table 1.

Table 1 shows the results of intradermal tests with fungi isolated from the cellar and the room where the patient had attacks, with a strain isolated from his eczematous lesions and with two stock strains.

The extracts of *Alternaria, Cephalothecium* and *Aspergillus nidulans* were used only in high dilution because the original

4. Van Leeuven, W. S.: Allergic Diseases, Philadelphia, J. B. Lippincott Company, 1925, p. 58.
5. Cadham, F. T.: Asthma Due to Grain Rusts, J. A. M. A. **83:** 27 (July 5) 1924.
6. Hansen: Behandl. d. deutsch. Gesellsch. f. inn. Med. **40:** 204, 1928.

extracts gave positive percutaneous reactions. Prausnitz-Kustner tests with the patient's serum and the extract of *Alternaria* 1305 were made in three normal individuals and were positive. Attempts at passive sensitization of guinea-pigs to *Alternaria* failed.

In order to determine whether these skin reactions were significant, inhalation tests were made with the preparations listed in table 2. The patient cooperated wholeheartedly in submitting to these tests, some of which were followed by days of distressing asthma.

TABLE 2.—*Preparations Used in Inhalation Tests*

Preparation	Reaction
Alternaria 1305 (cellar)	
Dry powder, unheated	Marked asthma
Dry powder, heated at 56 C. 24 hours	Mild asthma
Dry powder, heated at 100 C. 2 hours	No symptoms
Carbon dioxide extract, heated at 56 C. 1 hour	No symptoms
Broth from 3 months' culture, filtered through Berkefeld filter	Severe asthma
Broth culture as above, heated at 100 C. 1 hour, sealed tube	Trace of asthma
Broth culture as above, heated at 100 C. 1 hour, open tube	No effect
Broth culture distillate obtained under diminished pressure at from 40 to 50 C.	No effect
Circinella spinosa 1102	
Dry powder, heated at 56 C. 48 hours	Marked asthma
Penicillium glaucum (stock)	
Spores unheated	No symptoms
Paecilomyces variotii (room)	
Dry powder, heated at 56 C. 48 hours	No symptoms
Penicillium 1229 (room)	
Dry powder, heated at 56 C. 48 hours	No symptoms
Aspergillus niger (stock)	
Heated at 100 C. 1 hour	No symptoms
Cephalothecium roseum (stock)	
Dry powder, heated at 56 C. 48 hours	No symptoms

The inhalation tests were made in the case of fluids by spraying with an atomizer while the patient inhaled vigorously, and in the case of powder by blowing powder into the mouth while the patient inhaled.

Typical attacks of asthma began a few minutes after inhalation of spray from a broth culture of *Alternaria* or of powder prepared by drying and grinding the fungus. Heating at 100 C. practically destroyed the activity of the preparations, and prolonged heating at 56 C. weakened them. This heat sensitivity is of interest because it is similar to that observed by Cooke[1] in dust extracts.

Control tests with the substances which produced attacks, made on a normal individual not subject to asthma, produced no effect.

In an attempt to determine whether the asthmatic attacks were produced by flying spores or by some volatile substances given off by *Alternaria*, a distillate was prepared from a broth culture by boiling it under reduced pressure at a temperature of from 40 to 50 C. This distillate had an odor which the patient regarded as characteristic, but inhalation of the spray did not produce symptoms.

The patient showed the most marked sensitiveness to *Alternaria* and this fungus also incited asthma. He showed, however, definite skin sensitiveness to *Cephalothecium*, *Paecilomyces* and *Penicillium*, preparations of which failed to induce asthma. Conversely, one of the *Circinella* provoked asthma but failed to give a skin reaction. This lack of complete correlation is in accordance with numerous observations that skin reactions in asthmatic persons give only a lead toward the identification of the causative agent.

Comparison of different preparations indicated that unheated filtered broth from an old culture was the most effective preparation. The fact, however, that the patient reacted to the washed felt when dried and powdered, or extracted, indicated that the reaction was due to some substance in the fungus rather than to a substance which it produced in the culture medium. It seemed indisputable that some substance in at least one fungus (*Alternaria*) could incite asthma in this patient. In view of the fact that the spores of these fungi are small, that they travel great distances and that they are so omnipresent that culture mediums cannot be exposed for any length of time to the air in most localities without the deposition of some of these spores, it seems probable that the spontaneous attacks in this patient were due to the inhalation of fungous spores. The patient's own observations as to the localities and conditions in which he was most subject to attacks bear out this hypothesis.

DESCRIPTION OF FUNGUS

Alternaria is a common form genus of the hyphomycetous fungi, belonging to the family *Dematiaceae*.[7] The genera of this family are characterized by the presence of dark or smoky cell walls which give the colony a dark, almost black appearance. The genus *Alternaria* has large, dark brown, many celled, muriform spores, usually borne in chains on well differentiated colored conidiophores. These spores are widely distributed in nature since the species grow on various sorts of decaying material. The mold is often obtained as a contaminant in Petri dish cultures, though perhaps not as frequently as *Aspergillus* or *Penicillium*. Species of *Alternaria* are frequently referred to under the name *Macrosporium*, and many species have been described in botanic literature. The characteristics of the fungus given are usually insufficient for identification, so that the determination of the species from a culture specimen is difficult unless its natural host or habitat is known.

Elliott[8] has made one of the most thorough studies of the genus *Alternaria* and has arranged the various species in groups based primarily on spore measurements. The description of the genus, as given by Elliott, is as follows:

> Alternaria, Nees. Conidiophores solitary or fasciculate, erect or subdecumbent, simple or branched, generally short, colored. Conidia muriform, often with few longitudinal septa, ovate, obclavate, or elongate, always with more or less definitely pointed apex, often long beaked, colored, under favorable conditions forming chains.

In the few cases so far proved by culture experiments, the species represent the conidial or imperfect stage of the genus *Pleospora*, one of the *Ascomycetes*. (Culture 1305, with which the experiments in connection with the causation of asthma were conducted, may, however, belong to some other genus of *Ascomycetes* and the connection must be proved by culture experiments).

Species of *Alternaria* may be included in the group of fungi imperfecti which are prone to mutate or saltate in culture, so that two or more distinct types of mycelial growth develop in a culture originally derived from a single spore. By isolating and transferring fragments of hyphae (or spores if they are present) from the two kinds of mycelium, the two races can be cultivated separately, whereby each shows its peculiar characteristics to better advantage. Bonde,[9] in growing a chromogenic race of *Alternaria solani*, obtained a saltation appearing as a darker, faster growing sector in plate cultures. Transferring strains from plates to tubes and vice versa is apt to result in a saltation. Roberts,[10] working with *Alternaria mali*, obtained two distinct

TABLE 3.—*Spore Measurements* *

Series	Width	Length	Age, Days
I G	10.13	28.63	4
II G	10.25	25.46	7
III G	9.58	24.31	10
IV R	7.35	27.62	5
V R	8.71	23.71	9
Average race G	9.98 by 26.13		
Average race R	8.03 by 27.16		

* These figures represent for each series the average for 100 spores expressed in microns.

7. We are indebted to Dr. B. O. Dodge and Dr. Margaret B. Church for advice and assistance in the mycologic work.

8. Elliott, J. A.: Taxonomic Characters of the Genera Alternaria and Macrosporium, Am. J. Bot. **4**: 439-476, 1917.

9. Bonde, R.: Physiological Strains of Alternaria Solani, Phytopathology **19**: 533-548, 1929.

10. Roberts, J. R.: Morphological Characters of Alternaria Mali, J. Agri. Research **27**: 699-708, 1924.

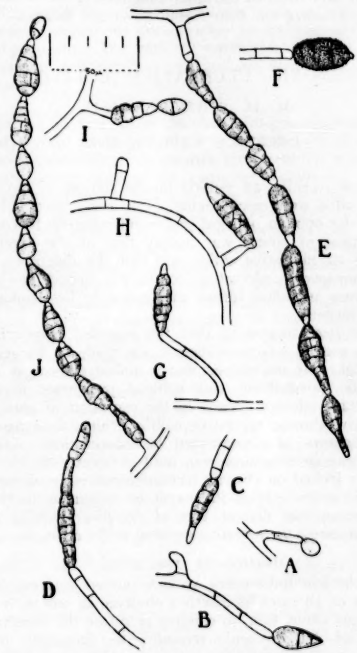
races as the result of saltations in a culture derived from a single conidium. Saltant A was unstable for ten generations and then became constant, while it required fifty-seven transfers to obtain a stable race of the second saltant B. The production of larger conidia by race B, Roberts thinks, is incident on their location near the surface of the medium.

During the progress of our work on asthma, *Alternaria,* culture 1305, was grown on a honey agar and a Sabouraud's medium. There was no indication that the stock culture was not a pure culture of a single form of *Alternaria.* When, however, the fungus was transferred to corn-meal agar, there appeared to be two types of mycelial growth, suggesting that perhaps a mutation had occurred as the result of changing the medium. At the center of the culture there was an excessive development of a grayish green to olivaceous mat of fluffy aerial hyphae such as characterized the original culture. A great many chains of conidia were formed in this region. Within the medium, and particularly at the margin of growth, the mycelium was coarser and of a reddish brown. In order to prove whether or not the culture was mixed and now contained two different mycelia or races of *Alternaria,* it was necessary to make single spore cultures. A number of single conidia were isolated with the aid of a binocular dissecting microscope from the greenish central area of growth, and after they had germinated they were transferred to tube cultures. Although the reddish brown mycelium appeared to be producing some conidia, it was impossible to tell this with certainty. It was necessary to tease out fragments of hyphae a few cells in length. After these had sprouted out so that tip ends of the new branches could be cut off and transferred to tubes, the original fragments were mounted on slides where they could be examined with high power to prove that the branches of hyphae transferred actually came from the reddish brown fragments. In this way two distinct races of *Alternaria* have been obtained from the original culture 1305. One race, G, develops a characteristic green to olivaceous mycelium and an abundance of fluffy aerial hyphae. Race R produces only a coarse reddish brown mycelium, and aerial growth is not noticeable.

In the absence of knowledge of the natural plant host, it is necessary to rely on spore measurements in the identification of the species of *Alternaria* which we obtained in the case reported here. The spores for measurement were taken from corn-meal agar tubes and placed on a slide in a drop of mounting fluid which does not alter the size of the spores. All of the cultures represent single spore strains. In all, 500 spores were measured, in five series of 100 spores each. Each series consisted of four sets of twenty-five spores, each set being taken from separate culture tubes. The mean width and length for the 100 spores of each series are shown in table 1.

These measurements show that there is a comparatively small difference in the size of the spores of the two races and would place our species in Elliott's *Alternaria tenuis* group, for which he gives the limit of spore measurements as follows: width, from 7 to 20 microns; length, from 11 to 50 microns. The types of spores found in the two strains G and R are shown in the accompanying illustration. In *E* and *J,* chains of spores from races G and R, respectively, are shown. The spores of these chains show what the measurements seem to indicate; namely, that the conidia produced by the red-brown race R are somewhat narrower in proportion to their length than those of race G. There is not enough difference to take either race out of Elliott's *A. tenuis* group. The spores of Roberts' saltants A and B show a much greater difference and his races are positively known to have arisen from a mycelium originally derived from a single spore.

It is interesting to note that spore measurements of our races of *Alternaria* compare very well with those of Roberts' *A. mali* and that some of the conidia have verrucose walls. It is an old custom among farmers to store apples in the cellar for winter use and it may well be that, in this way, the particular cellar in which our patient contracted such severe attacks of asthma had become contaminated with *Alternaria mali* or with a race closely related to it. As soon as the opportunity



A, B, C, D, conidiophores and developing conidia of race R; *G, H, I,* the same for race G; *E,* a complete chain of conidia of race R; *J,* the same for race G; *F,* a rough wall conidium of race R. All drawings were made to the scale indicated with the aid of a camera lucida.

offers, tests will be made to determine whether our races G and R show any difference in their ability to bring on asthma.

COMMENT

The observations previously made by Cadham, van Leeuven and Hansen, and those here described, offer an explanation of the activity of dust in producing asthma.

As to the relationship of mold sensitiveness to the eczema in our patient, we have no conclusive evidence. We know only that he gave a skin reaction to the mold frequently recovered from his skin lesions. It is interesting, however, to note that Hilgermann [11] and

11. Hilgermann, R.: München. med. Wchnschr. **68**: 702 (June 10) 1921.

Niethe [12] attributed certain cases of eczema to sensitization to common molds.

SUMMARY

In the case of asthma reported here, the attacks occurred in locations in which mold spores were abundant. The patient showed extreme skin sensitiveness to a strain of *Alternaria* recovered from a house in which he had attacks. Attacks were induced in this patient by the extract of *Alternaria* in powdered form and also by the broth in which it had been grown. An attack was also induced by the dry powder of one of the *Circinella* isolated from another room in which he had attacks. He did not give any marked skin reaction to an extract of the latter fungus.

One Hundred and Sixty-Eighth Street and Broadway.

CHRONIC ULCERATIVE COLITIS *

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Until recently, all reports on the subject of ulcerative colitis were discouraging. For many years it has been the opinion of most gastro-enterologists that the treatment of colitis was mainly that of the specific forms of ulcerative colitis and that the diagnosis of the nonspecific ulcerative colitis was based on the existence of colon ulcers with negative bacteriologic observations.

The first suggestion that the so-called nonspecific colitis was an infectious disease was made by Bargen [1] in 1924. He maintained that a diplostreptococcus of definite morphologic and cultural properties is an important etiologic factor in the causation of certain cases of chronic ulcerative colitis. Since then many investigators have confirmed his observations. The European investigators, too, until of recent date have always looked on chronic ulcerative colitis as of nonspecific origin. It is important to remember in this connection that distant foci of infection parallel to a great extent the infection existing in the colon.

METHOD OF PROCEDURE

In the past three years we have carried on a careful survey of all cases of diarrhea observed in our gastrointestinal clinic, first, to confirm or refute the observations of Bargen and, secondly, to determine the specificity and therapeutic value of autogenous vaccine. The patients were properly prepared a day before and routine proctoscopic examinations were made in each patient. In the years 1926-1929 about 1,200 proctoscopic examinations were made, of which only sixty-five conformed to a clinical and pathologic picture of a chronic ulcerative colitis. These sixty-five cases presented definite proctoscopic manifestations of an infectious process with ulcerations in various portions of the colon. Cultures were then obtained through the proctoscope by means of a sterile swab and transferred at once to a proper medium for incubation and subsequent culture and subculture. The cultures were inoculated in dextrose sheep's brain broth, on blood agar plates and in Endo's medium. At the same time slides were prepared for Gram and acid-fast stains. Whenever necessary sterile saline washings were made from the ulcers for guinea-pig inoculation. Subcultures were made from dextrose brain broth as well as from the blood agar plates until pure cultures of the various organisms were obtained. Cultures of green-producing gram-positive diplococci and other organisms were passed through the necessary sugars. The individual strains of bacteria were then isolated from the cultures and a polyvalent vaccine was prepared. The autogenous vaccine was then administered hypodermically to the patients in progressively increasing dosages in accordance with the severity of the infection. Subcultures of chromogens were inoculated on plain agar and grown at room and incubator temperatures. Rabbits were inoculated intravenously with from 5 to 7 cc. of pure forty-eight hour dextrose broth cultures of green-producing diplococci, hemolytic streptococci and *Bacillus pyocyaneus*, respectively. These rabbits were under careful observation.

TABLE 1.—*Summary of Sixty-Five Cases of Chronic Ulcerative Colitis*

Number of Cases	Per Cent	Average Number of Stools Daily	Average Weight Loss	Duration	Proctoscopic Observations	Age Variation
Before Vaccine Therapy						
52	80	5 to 99	12 to 50 lbs.	1 to 2 yrs.	Stage of ulceration; no Streptococcus hemolyticus present	18 to 57 yrs.
5	8	6 to 30	40 lbs.	4 yrs.	Stage of ulceration; Streptococcus hemolyticus present	30 to 75 yrs.
8	12	40	60 lbs.	8 yrs.	State of ulceration; superimposed infection	28 to 59 yrs.
After Vaccine Therapy						
Number of Cases	Per Cent	Average Number of Stools	Average Weight Gain	Number of Vaccine Injections	Proctoscopic Observations	Follow Up	Progress and Comment
52	80	1 to 3	8 to 19 lbs.	25 to 75	Stage of inflammation	2½ yrs.	Patients free of symptoms
5	8	2 to 10	5 lbs.	25 to 75	Stage of ulceration	3 yrs.	Symptoms still present in mild form
8	12	12 to 30	Continued to lose	25 to 100	Stage of bleeding	6 mo. to 1 yr.	3 patients died; 3 refused injections; 2 worse with injections

RESULTS

Briefly summarized, the results in table 1 clearly demonstrate that most remarkable improvement was noted in about 80 per cent of the cases observed. It must be noted in this connection that fifty-two patients in this group were free from a *Streptococcus hemolyticus* strain. It is evident from the progress of the five patients listed in table 1 that the symptoms persisted after vaccine therapy. The *Streptococcus hemolyticus* strain was present and remained present on reexamination with the proctoscope after injections of vaccine. In this group of five cases the ulcers of the

12. Niethe: Arch. f. Dermat. u. Syph. **153**: 358, 1920.

* From the Research and Educational Hospital, Department of Medicine, University of Illinois College of Medicine, and the Grant Hospital.
* The bacteriologic aspects of this problem, including the preparation of vaccines, were done by Miss Kaplan; the clinical phases, including proctoscopic examinations, have been studied by M. H. Streicher.

1. Bargen, J. A.: Studies on Chronic Ulcerative Colitis, J. A. M. A. **83**: 332-336 (Aug. 2) 1924; Experimental Studies on Etiology of Chronic Ulcerative Colitis, Collected Papers of the Mayo Clinic **16**: 241-245, 1924; Experimental Studies on the Etiology of Chronic Ulcerative Colitis: Suggestion for a More Rational Form of Treatment, ibid. **17**: 7, 66, 276, 1925; Chronic Ulcerative Colitis, ibid. **19**: 351-362, 1927; Treatment of Chronic Ulcerative Colitis, Minnesota Med. **10**: 689 (Nov.) 1927.

colon did not heal readily and showed little indication of tissue reaction. The group of eight cases constitutes a large percentage of our failures. Of the three deaths, two followed surgical operations while the third was apparently due to exhaustion and repeated bleeding spells.

Our results show that in most cases of ulcerative colitis green-producing gram-positive diplococci are found predominating. Frequently these are in association with other bacterial flora. The green streptococci fall into five groups according to their production of acid in carbohydrate mediums.

TABLE 2.—*Sugar Reaction Produced by the Gram-Positive Green-Producing Diplococci of Ulcerative Colitis*

	Sixty-Five Cases of Ulcerative Colitis,* 57 Strains		Thirty-Four Cases of Other Diseases, 23 Strains		Twenty-Nine Normal Persons, 9 Strains	
Lactose	56+	1—	23+	0	9+	0
Maltose	55+	2—	20+	3—	7+	2—
Mannite	17+	40—	7+	16—	4+	5—
Salicin	42+	15—	15+	8—	7+	2—
Inulin	0	57—	0	23—	0	9—

* In five cases of the sixty-five, hemolytic streptococci were present; in seven cases of the sixty-five, spirilla predominated in smears; in one case tuberculosis was found. Among other diseases studied were mucous colitis, chemical colitis, amebic dysentery, duodenal ulcer, syphilitic obstructions and hernias.

Tables 2 and 3 demonstrate the sugar reactions of the gram-positive green-producing diplococci of ulcerative colitis.

In addition to the green-producing gram-positive diplococci and hemolytic streptococci, we found other bacteria in ulcerative colitis such as diphtheroid bacilli, *Staphylococcus albus* and *aureus, Staphylococcus albus-hemolyticus, Bacillus pyocyaneus, B. lactis-aerogenes* and *B. coli.* In the normal cases we have not been able to isolate hemolytic streptococci. Occasionally, in addition to *B. coli,* we isolated green-producing gram-positive diplococci similar to those of ulcerative colitis; also *Staphylococcus albus* and *aureus, Staphylococcus albus-hemolyticus, B. welchii* and diphtheroid bacilli. In three cases, spirilla predominated in the smears. The green-producing gram-positive diplococci from all other conditions fall into five similar groups (table 3). Cases of ulcerative colitis which showed the predominance of spirilla in direct smears from the ulcers showed occasional green diplococci. Rabbits which were inoculated with hemolytic streptococci showed lesions similar to those produced by the green diplococci. The rabbits were inoculated intravenously with from 5 to 7 cc. of a pure forty-eight hour dextrose broth culture of the organisms and allowed to live under observation. The animals lived from twenty-eight days to five months after inoculation. On autopsy the majority of animals showed severe congestion of the blood vessels, marked hyperemia and edema of the mucosa of the colon (nine of thirty-nine rabbits). In one autopsy the green diplococci were isolated from the ulcers of the colon of the rabbit. Of the two rabbits inoculated intravenously with the pure culture of hemolytic streptococci (dextrose broth), the autopsy of one showed congestion, hyperemia and edema while that of the other showed ulcers of the colon from which hemolytic streptococci were isolated.

TREATMENT

The method of approach in general was threefold; namely, prophylactic, dietary and specific. We cannot overemphasize the extreme importance of proper rest in these cases, the necessity of removing all mental strain and the eradication of distant foci of infection. In reference to diet, one is impressed considerably with the encouraging results obtained with an essentially high calory, high vitamin and low residue diet. It is true, however, that many clinicians recommend no special diet or a so-called general diet and allow their patients to adapt themselves to a suitable regimen. This specific treatment consists of injections of polyvalent autogenous vaccine hypodermically. The individual dosages vary from 0.1 cc. to 1.5 cc., depending on the extent of the process. The proctoscopic examinations are repeated when needed and bacteriologic observations noted. The patients remain under observation until free from symptoms and until proctoscopic examinations are negative bacteriologically and pathologically. We wish to emphasize that no local treatment was administered and no irrigations were employed.

COMMENT

If we assume from our bacteriologic observations that chronic ulcerative colitis is an infectious disease, then the rationale of the specific treatment lies in active immunization against the causative organisms. The causative organism in our opinion is not a single type of bacteria but a number of different types of bacteria or a number of different strains of the same bacterium, so that we are not justified in assuming that a green-producing gram-positive diplostreptococcus is solely responsible for the disease, because in 7.6 per cent of our cases hemolytic streptococci predominated. Again, cases of ulcerative colitis in which injections are made with the vaccine from a pure culture of a green diplococcus show little or no progress, whereas the same cases treated with a polyvalent autogenous vaccine give encouraging results. Many physicians believe that the autogenous vaccine has the properties of nonspecific protein therapy. That this is not true is clearly demonstrated by the fact that negative results are obtained when typhoid vaccine or milk injections are substituted in these cases.

One necessarily encounters the question of remissions or recurrences in ulcerative colitis. If we assume that the autogenous vaccine therapy is specific or is actively immunizing the patients, we should not expect the symptoms to recur. In this series of cases 80 per cent of the patients had no remission for two and one-half years; it is true, however, that recurrences were frequent in thirteen cases and that the only logical explanation one can offer is that the mental makeup of these individuals was adverse and that these cases comprise a group in which there was considerable neglect and mismanagement. We are of the opinion that recurrences are common in patients who have been neglected for several years and have not been on any systematic regimen; in these cases it is most uncommon to observe any tissue reaction as a response to vaccine therapy. In our experience recurrences are not frequent in cases that have been diagnosed early and properly cared for.

TABLE 3.—*Classification of the Fifty-Seven Strains of Green-Producing Gram-Positive Diplococci According to Acid Production*

Sugars Used												Number of Strains
Lactose	+	Maltose	+	Mannite	+	Salicin	+	Inulin	—			17
Lactose	+	Maltose	+	Mannite	—	Salicin	+	Inulin	—			24
Lactose	+	Maltose	+	Mannite	—	Salicin	—	Inulin	—			13
Lactose	+	Maltose	—	Mannite	—	Salicin	—	Inulin	—			2
Lactose	—	Maltose	+	Mannite	—	Salicin	+	Inulin	—			1

At this time we are not inclined to stress "the Bargen bacillus" as the primary etiologic factor of ulcerative colitis. We are indebted considerably to Bargen for being the first to bring forth the idea that the so-called nonspecific chronic ulcerative colitis should be considered an infectious process.

CONCLUSIONS

1. Chronic ulcerative colitis should be considered an infectious process.
2. The green-producing gram-positive diplostreptococcus is not the sole etiologic factor of chronic ulcerative colitis.
3. A polyvalent autogenous vaccine given hypodermically is of considerable therapeutic value.
4. The green-producing gram-positive diplococci are all inulin negative and the majority are mannite negative.
5. Similar green-producing organisms are found in amebic dysentery, duodenal ulcer, syphilitic obstruction, hernias, and in many other conditions; similar organisms are present in some normal cases.
6. Hemolytic streptococci are also isolated from cases of ulcerative colitis.
7. The green-producing gram-positive diplococci fall into five groups according to acid production in sugars.

307 North Michigan Avenue.

BENIGN LESIONS IN CARDIAC PORTIONS OF ESOPHAGUS AND STOMACH

ROENTGENOLOGIC DIAGNOSIS *

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The cardiac segments of the esophagus and stomach constitute a rather unsatisfactory field for roentgenologic diagnosis. Lesions encountered in this area are relatively fewer and, with certain exceptions, more difficult to demonstrate than those which affect the distal portion of the stomach or the duodenum. Neither the esophagus nor the upper part of the stomach is accessible to the manipulation which is of such valuable aid in examining other parts of the alimentary canal, and the technic employed as a routine for examination of the digestive tract must often be supplemented by special procedures to elicit signs of disease. Technical minutiae are irksome to the examiner, but unless he employs them and exercises punctilious care small lesions are likely to escape discovery.

Benign lesions in this field comprise chiefly cicatricial strictures, cardiospasm, diverticula, nonmalignant new growths, ulcers and diaphragmatic hernias.

Cicatricial stricture is commonly a result of drinking caustic liquids, such as lye or acids, but it may follow vomiting of pregnancy or typhoid ulceration, and occasionally it ensues from any of a variety of diseases and injuries. Strictures from caustics are usually situated in the upper third of the esophagus, whereas those due to other causes are likely to be found in the lower third. Often the strictures are multiple, but they may be single. In the majority of cases the roentgenologic manifestations are rather typical. Immediately above the stenosis the barium mixture forms an inverted cone and trickles through the constriction in a fairly direct line, although at intervals the linear shadow may have unilateral or fusiform expansion at points where the contraction is less pronounced. Obviously, the picture may resemble that of cardiospasm or cancer. However, cardiospasm is almost invariably situated precisely at the hiatus in the diaphragm or at the cardiac opening, and dilatation tends to be extreme; cicatricial strictures in the lower third seldom coincide with the points mentioned, and the dilatation is rarely as great as that of cardiospasm. In cancer, as a rule, the barium shadow above the stenosis is not smoothly conical but irregular, and the constricted channel below is markedly tortuous. There is little reason to confound cicatricial stricture or stenosis from any intrinsic disease of the esophagus with compression stenosis from cardiac enlargement, aortic aneurysm or mediastinal tumor. Narrowing by compression is not extreme, is smoothly regular and affects a considerable extent of the gullet, and its cause should be apparent.

Among demonstrable nonmalignant conditions of the distal portion of the esophagus, cardiospasm is most common. In a majority of cases the barium shadow terminates in an evenly rounded, symmetrical cone; in a minority the stenosis is at the cardiac aperture and the epicardia is depicted as a nipple-like prolongation of the shadow. Exceptionally the stenosis is slightly above the hiatus. Dilatation proximal to the spastic contraction is usually much greater than that incident to other obstructive conditions, and is sometimes prodigious. Usually the flaccid walls exhibit little if any peristaltic activity, but occasionally vigorous waves of contraction or reverse peristaltic movements are observed. Frequently the esophagus is not only dilated but elongated, and pursues a winding course or is partially folded in its lower extent. I have encountered instances also in which the redundant esophageal sac had prolapsed through the diaphragm and invaginated into the upper segment of the stomach, the epicardia being bulbous and sharply demarcated from the main portion of the esophagus at the hiatus.

So striking and characteristic is the appearance of cardiospasm that the diagnosis will not often go astray. Dilatation of the esophagus resulting from a high-seated hour-glass constriction of the stomach has only a superficial resemblance to cardiospastic dilatation, and its nature is obvious. When the esophagus is elongated and folded below, the pouch might be mistaken for a low diverticulum. Rarely, bits of food retained in the esophagus deform the terminal shadow and imitate the defects produced by cancer, or, with equal rarity, the barium shadow above an obstructing cancer ends in a smooth cone like that of cardiospasm. If the spastic stenosis is above the hiatus the condition can be confounded with cicatricial stricture, and vice versa. Notwithstanding these sources of error, the enormous dilatation will usually distinguish cardiospasm from any simulant. For a considerable time after dilatation of a cardiospasm with the hydrostatic bag or sounds, the barium mixture will lag to a certain degree at the site of stenosis, and this fact alone does not warrant the conclusion that the treatment has been ineffective.

A few examiners have reported the observation of transitory spasm at the cardia or in other parts of the esophagus, either momentary or lasting twenty or thirty seconds. I have not seen any constrictions of this kind worthy to be dignified by the name of spasm, although occasionally I have noted exaggerated, dis-

* From the Section on Roentgenology, the Mayo Clinic.
* Read before the joint meeting of the Section on Gastro-Enterology and Proctology and the Section on Radiology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 11, 1929.

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orderly or hesitating peristaltic contractions which I thought could be attributed to the patient's agitation or his repugnance for the barium mixture.

Diverticula are extremely rare at the lower end of the esophagus. When they occur here, they are usually situated on the anterior wall and project to the left. As a rule, they are small and finger-like, and their appearance is distinctive; if they are large, they may be imitated by partial herniation of the stomach through the hiatus, or by the sacculated folding which sometimes results from cardiospasm with elongation of the esophagus. Rarely, a low diverticulum coexists with cardiospasm.

Diverticula in the upper third of the stomach are not altogether uncommon. They are usually single and arise from either curvature or the anterior or posterior wall. In the tangential view, a diverticulum appears as a rather slender pendulous sac, communicating at its upper end with the gastric lumen, which is otherwise normal. It is to be distinguished from the pseudodiverticulum or accessory pocket of a perforated ulcer, which is most often rounded or irregular, may exhibit a fluid level with an air bubble above, and is likely to be associated with hour-glass contraction of the stomach in the plane of the pocket or with other spastic manifestations. Ordinarily, single or multiple diverticula of the bowel, without any complicating inflammation, do not have clinical significance, but a considerable proportion of the gastric diverticula operated on at the Mayo Clinic have been found to contain cancerous tissue at the tip.

Although syphilis of the esophagus, in the form of gumma or stricture, has an established but minor place in the literature, it is uncommon, and I cannot cite a case from experience. At the clinic all cases in which the condition was suspected of being syphilitic because an obstructive esophageal lesion and a positive reaction to the Wassermann test were associated proved later to be cancer.

Gastric syphilis is far less rare, and in numerous cases of a series which I have previously reported the cardiac segment was implicated. It is noteworthy, nevertheless, that apparently the cardia is involved only by extension from the lower segments, and its uppermost portion, enclosing the gas bubble, is usually intact. This fact, in conjunction with regular, concentric narrowing of the remainder of the stomach or contraction of the middle segment in the form of a thumb-bell, aids in the diagnosis.

Benign new growths of the esophagus are to be rated among the pathologic curiosities, and I can recall only two cases that have come under my immediate observation. In the first case, the tumor, a hemangioma several centimeters in length, was suspended from its point of attachment in the middle third of the esophagus. It produced a central translucent area in the barium shadow, and as this is characteristic of benign tumors in other parts of the alimentary canal the diagnosis was made accordingly. In the second case, multiple small polyps in the lower half of the esophagus caused obstruction and filling defects, but these signs were wrongly attributed to cancer.

Benign tumors in the stomach are more likely to be found in its distal two thirds, but they arise occasionally in the cardiac portion. In one case the new growth was sessile and was on the posterior wall just below the plane of the esophageal opening. It caused the entering barium stream to divide but otherwise would not have been discovered, for the gastric shadow was normal after complete filling. In another case the tumor was similarly situated but was pedunculated; it not only split the barium stream but produced the characteristic central defect in the shadow of the filled stomach, and could be moved about by manipulating the stomach below.

Observers have reported instances of peptic ulcer in the lower segment of the esophagus which in their morbid anatomy were entirely comparable to chronic gastric or duodenal ulcers. Because of the constricting spasm which they tend to produce, their roentgenologic manifestations were often described as similar to those of cardiospasm, but in at least one recorded case the ulcer had perforated the esophageal wall and formed an accessory pocket. Experience in the clinic has been confined to single or multiple, large or small, superficial erosions which are often incident to cardiospasm or the result of trauma; they have no resemblance to chronic peptic ulcer morphologically, and are not discernible roentgenologically.

It is well known that the site of election of gastric ulcers is in the middle third of the stomach in the vicinity of the angular incisura. Occasionally, however, they are situated in the cardiac third. Most often the ulcer is on or is sufficiently near the lesser curvature to produce the usual marginal niche. Rarely the niche is well out on the posterior or anterior wall, where it is visible only as a shadow fleck and, when small, is hard to discover. I have never seen an ulcer above the level of the esophageal opening; that is to say, in the area of the gas bubble.

Of particular interest among the abnormalities to which this region is subject is herniation of the stomach through the diaphragm, for its roentgenologic features are varied and sometimes spectacular. It is often mistaken for other conditions, and it often passes undiscovered. Hernia through the hiatus is usually congenital and associated with a short esophagus. Before the barium is given, the gastric gas bubble may be visible above the diaphragm and behind the heart. As the barium descends, it is inclined to lag in the lower part of the esophagus and then enters the cardia, which is obviously above the diaphragmatic arch. The herniated portion of the stomach, which of course varies in size, may surround the apparently invaginated lower end of the esophagus symmetrically, or it may project toward either side, more often toward the left. Occasionally a gastric ulcer with a manifest niche is seen at the level of the constriction produced by the hiatus. Below the diaphragm, the stomach is diminished in size in proportion to the extent of herniation above, and the pyloric end may be drawn over to the median line or to the left of the spine. The shadow of the diaphragmatic arch is distinguishable, and it moves normally on respiration.

Traumatic hernias through the diaphragm are almost invariably on the left side, and the rupture may occur at any point, centrally, mesially or laterally. As a rule, the barium passes without delay through the esophagus, although the latter may be unduly curved or angled in its course. Deformity of the gastric shadow varies in character and degree, and is partly dependent on the extent of herniation into the thoracic cavity. The diaphragm is fixed; its shadow is hard to trace, but a remnant of the arch can usually be discerned.

Errors in the diagnosis of diaphragmatic hernia are easily made. In the congenital type with a short esophagus, the examiner may think of cardiospasm or of low diverticulum. If the niche of an ulcer is appar-

ent, he may conclude that the picture is simply that of gastric ulcer with hour-glass deformity. Occasionally, the gastric deformity produced by hernia, whether congenital or acquired, is misinterpreted as cancer, but this error is hardly to be condoned. Fundamentally, the diagnosis of hernia of the stomach rests on ascertaining the fact that at least a portion of the stomach is above the diaphragm. An unusually high position of the stomach is not diagnostic, for this occurs also in diaphragmatic eventration. However, in eventration the shadow of an intact arch can be traced in most instances, and its respiratory excursions are reversed from the normal. It is my impression that true diaphragmatic eventration is extremely rare, and that an abnormally high gas bubble usually signifies diaphragmatic hernia. On the other hand, the arched shadow of the cardiac dome in a case of hernia may be mistaken for that of the diaphragm, thus causing a negative error. It should be unnecessary to say, also, that when the patient stands, a hernia may be spontaneously reduced, or it may not be possible to demonstrate the herniated portion of the stomach. Accordingly, to establish the diagnosis or to exhibit the gastric contours adequately, it is often necessary to examine the patient in the supine, prone or Trendelenburg position. Since the colon is often implicated in the hernia, examination with a radiopaque enema is desirable to confirm or amplify the diagnosis. I would especially emphasize the opinion that any abnormality of the barium inflow at the cardia, without definite obstruction, should be regarded as suggestive of congenital hernia and a stimulus to thorough investigation.

Finally, even at the risk of being trite, I would point out again that the intimate cooperation of roentgenologist and clinician, which can seldom be omitted with safety whenever they are both concerned, is indispensable in this particular field. Although exercised to best advantage in separate hands, the roentgenologic, clinical, esophagoscopic and gastroscopic examinations are not really independent but complementary and mutually corrective.

ABSTRACT OF DISCUSSION

DR. R. R. NEWELL, San Francisco: Dr. Moore showed an ulcer of the stomach higher than I have ever seen one. It is certainly unusual to find an ulceration of the stomach in the upper quarter. Rare as diverticula of the stomach are, I believe they are more frequent in the upper portion than are ulcers in the upper portion. It is not remarkable that dilatation of the esophagus in a case of cardiospasm is apt to be so much greater than it is above a carcinoma. We know that cardiospasm is ordinarily a much more chronic disease and has often existed for ten years or more at the time the roentgenologist sees it, and the great dilatation is due to the great length of time available for stretching the esophagus. It does us good once in a while to stop to think how peculiarly fortunate we are today to have the x-rays for the diagnosis of these diseases in the middle of the body where they cannot be discovered with the eyes or with the fingers. As far as I know, the first case of cardiospasm was reported more than a hundred years ago, and it is interesting to read this old English physician's explanation of how he investigated the man's difficulty in swallowing by passing a "large, blunt instrument" down the poor fellow's esophagus. He shoved and shoved and finally shoved the blunt end through the cardia into the stomach, and then he couldn't get it back again. So having shoved hard he then pulled and pulled and pulled and finally succeeded in getting it out again, "with such a loud noise that it frightened the bystanders." I was impressed by what Dr. Moore had to say about one's ability to help himself in diagnosis by palpation. It is true that palpation is a tremendous help, especially in regard to the duodenum. In the lower end of the esophagus we have only gravity to help us in the manipulation. Dr. Hickey pointed out the advantages of using both thick and thin meals, and placing the patient in various more or less unusual positions, so as to get the barium to go into all the corners. We must use every possible arrangement of patient and x-ray beam if we are to avoid missing the less obvious lesions in this region.

DR. FRANK SMITHIES, Chicago: I am glad that Dr. Moore emphasized the fact that in this lesion there is diffuse dilatation practically of the entire esophagus. The dilatation varies in extent but it is always present, thus differing definitely from the esophageal contour associated with ulcer or cancer. The name cardiospasm should not be used alone. It would be preferable always to speak of cardiospasm and diffuse dilatation of the esophagus; otherwise confusion exists in the minds of the general practitioner, and even of the specialist. Cardiospasm is not the same as spasm at the cardia. Cardiospasm is accompanied by anatomic change in esophageal structure. It is precipitated by causes unknown to us. In association with this lesion, there are definite evidences of faulty innervation of the diaphragm and the lower esophagus. In the treatment of this ailment one cannot rely on Christian science or the spine punching of the osteopaths or the chiropractors; one must apply measures which actually treat an organic lesion and not expect a special kind of diet and belladonna or some bromide to relieve the disability. Symptomatically in the organic lesion of the esophagus associated with stricture, the patient begins gradually to abstain from taking solid food; usually when he comes for examination he has been eating purées, and then water and milk. In cardiospasm, from the beginning, the individual handles solid foods fairly well, but if he takes a glass of water or a cup of soup at the beginning of the meal he has to leave the table hurriedly and find the kitchen sink. This is a valuable point of differentiation between cardiospasm and the organic stricture of the esophagus. I have seen a number of instances of injury or perforation of the esophagus because an unguided bougie has been introduced either as explorative or in therapy. Certainly if an unguided bougie is passed, it should be done before the fluoroscope, but I feel that all bougies should be passed on a silk thread guide, so that one knows that all the time it is in the lumen of the esophagus and hence will not injure the esophagus or the stomach. The apparatus for dilation of the cardia devised by Henry Plummer is excellent. Its limitation is that it requires a water attachment. I have devised an apparatus of a pneumatic type which has all the advantages of Plummer's dilator and in addition certain practical improvements. I have used this apparatus for more than a year and have found its results to equal those obtained with Plummer's apparatus.

DR. ZACHARY SAGAL, New York: From the clinical standpoint the diagnosis of cardiospasm, when it is typical and of long standing, is very simple. However, those cases which have not existed long and are due to some other pathologic condition, such as ulcerations, present considerable difficulties, and these difficulties are multiplied by the fact that patients will either not give sufficient information or deliberately misguide the physician, fearing that they may prejudice him one way or the other. A patient was referred to me for observation. He had asked his physician not to give me any information, and himself gave me a history of short duration. The fluoroscope, however, revealed a typical cardiospasm, and twenty-four hours after the barium was given there was not a bit of barium in the stomach. That emphasized the point brought out by Dr. Hickey of the trickling of the barium through the lower end of the esophagus, which is typical of malignant growth. Later we learned that a diagnosis of carcinoma had been made five years before and the man was urged to submit to operation immediately, but the condition promptly subsided. A diagnosis of cardiospasm was made roentgenologically and an esophagoscopic examination revealed an ulcer at the cardia.

DR. F. A. SPEIK, Los Angeles: I am a disciple of Sippy. He was the first to devise an air bag in contrast to the Plummer bag. I have had only eighteen cases of cardiospasm, but they have all been treated successfully with the Sippy bag. As Dr. Smithies says, the big point in diagnosis is this: In carcinoma of the esophagus the patient has difficulty in swallowing solids but not so much in swallowing liquids, and in cardiospasm he has a great deal of trouble in swallowing liquids. I think one

of the etiologic factors in the production of cardiospasm is drinking cold beverages. Many people who have no cardiospasm at all may feel a tightness and stricture in the esophagus and chest after a cold drink. Jackson, however, does not believe that it is due entirely to a spasm of the cardia or of the esophagus but to a spasm of the diaphragm. He speaks of this opening in the diaphragm as a pinch-cock which goes into spasms and causes a retrograde regurgitation. I recall the case of a woman who had been operated on for a stricture of the pylorus. She was vomiting food and had all the evidences of a stricture of the pylorus. A gastro-enterostomy was done, but the patient did not improve, so she came to Chicago to see Sippy. An assistant made the diagnosis because the patient had great difficulty in swallowing liquids. She was in an emaciated condition and died soon afterward. Dr. Sippy had this pathologic specimen which showed that the fusiform sac held as much as a quart of liquid. It folded up like a tobacco pouch. The musculature was hypertrophied and the mucous membrane was in folds.

DR. JOHN H. FITZGIBBON, Portland, Ore.: It may be somewhat aside from Dr. Moore's paper to discuss the treatment of cardiospasm, but as treatment has been mentioned in the discussion, it will perhaps not be out of place to describe a modification of the Sippy air bag dilator which I have developed recently. For a number of years, I used the Sippy air bag dilator with satisfactory results except in cases in which the esophagus was markedly dilated. In attempting to dilate in a case in which there was a great deal of dilatation and sacculation of the esophagus with increased angulation above the hiatus, I discovered, by fluoroscopy, that my difficulty in getting a satisfactory stretching was due to the fact that the pressure exerted by air entering the bag caused it to slip upward into the esophagus without properly stretching the cardia. The great size of the esophagus above permitted lateral bending of the shaft of the instrument, so that the bag could not be held in proper position while being inflated. To remedy this, I first tried a saddle-shaped bag and later an elongated bag, but without much improvement. Obviously the reason the bag tended to slip upward was that it was inflated from above. Had it been inflated from the stomach side, it would have slipped downward. With this idea in mind we built a bag which is inflated from the two ends at the same time, so that the pressure is equal above and below the diaphragm. To accomplish this, it was merely necessary to run a small tube down inside the bag, so that air could enter the two ends simultaneously. This instrument cannot slip, and has been used many times with excellent results. The same principle may be applied to either air or hydrostatic dilators if desired. The original Sippy cardiospasm dilator was satisfactory in most cases, but the modification has definitely improved our results, particularly in patients with more than average dilatation of the esophagus above the stenosis.

DR. CLARENCE G. TOLAND, Los Angeles: I am not a roentgenologist, but I am much interested in the x-rays. I endeavor to practice surgery. The progress and development of roentgen diagnosis, especially in relation to surgery, is interesting. I have listened with the greatest of interest to all the papers. You roentgenologists have made better surgeons of us, because it is just as important that we who are practicing surgery should come into the x-ray laboratory to watch what you are doing as it is for you to follow your cases into the operating room. If we could have better cooperation between the departments, our patients would be greatly benefited. You tell us exactly what to do and how to do it. If we surgeons would only listen to your teachings, we would save a great amount of suffering in cases of acute bowel obstruction.

DR. TATE MILLER, Dallas, Texas: The cause of cardiospasm is not known. One hesitates to mention foci of infection in connection with this condition; however, I have had two cases in the last ten years that have resisted the usual treatment with the Plummer instrument. I must state, however, that because of an occasional catastrophe when the Plummer instrument is used at high pressure, I was afraid to run up the pressure in the treatment of these cases as high as is recommended, so that it is possible that in these cases dilation was insufficient. In one case with recurring symptoms, the removal of some definitely infected tonsils, and in another case the removal of an appendix that may have been causing trouble all along but that we had failed to recognize, prevented further returns of cardiospasm. Both these cases had persisted in spite of the dilations until the operative measures were taken; so that I feel that whenever the cause of cardiospasm is found a focus of infection will be found to have some starting irritative causative activity.

DR. A. B. MOORE, Rochester, Minn.: Since there has been such unanimity of opinion in regard to the treatment of cardiospasm, it would seem that the diagnosis is the important factor. I have seen several instances similar to the one which was quoted this morning, in which a case of cardiospasm with marked obstruction and diffuse dilatation had been treated for pyloric obstruction. This seems to be an inexcusable error and yet it apparently is one which occurs quite frequently. While I believe that the pain of cardiospasm is usually associated with the swallowing of liquids, we see cases in which the discomfort is associated with the taking of solid food. Not infrequently a case which roentgenologically shows no obstruction to the liquid suspension of barium will show a definite lagging and irritability of the lower third of the esophagus when a semisolid barium-impregnated meal is given. While the pain of cardiospasm is usually suggestive, I have seen cases in which a previous diagnosis of angina had been made, when in reality the painful seizures were caused by an obstruction in the cardiac end of the esophagus.

HERNIA OF THE STOMACH THROUGH THE ESOPHAGEAL ORIFICE OF THE DIAPHRAGM *

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An "esophageal orifice hernia," as the term is used throughout this article, is a protrusion of a portion of the fundus of the stomach through the esophageal opening of the diaphragm into the thorax. This condition was formerly considered very rare and of but slight clinical significance. Thus, in 1911, Eppinger [1] summarized the literature on diaphragmatic hernia and reported that of 635 cases of herniation through various portions of the diaphragm, only eleven involved the esophageal hiatus. Quénu in 1920 [2] found only one esophageal orifice hernia in a series of 116 cases which had come to operation. Breitner [3] stated that, of the large number of diaphragmatic hernias reported up to 1921, only forty-four had been diagnosed during the life of the patient, and in only six of these was the diagnosis made without the aid of the x-rays. These studies were carried out before the roentgen examination of the gastro-intestinal tract with the opaque meal had come into widespread use.

During the past decade, numerous reports in the literature indicate that esophageal orifice hernias are much more common than was previously supposed. In 1924, Carman and Fineman [4] reported seventeen cases, fifteen of which had been diagnosed roentgenographically during the years 1923 and 1924. Morrison [5] in 1925 stated that he had encountered forty-two cases of diaphragmatic hernia of the fundus of the stomach

* From the X-Ray Department, Boston City Hospital, Dr. P. F. Butler, Roentgenologist-in-Chief.

* Read before the Section on Radiology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 12, 1929.

1. Eppinger, H.: Pathologie des Zwerchfels, Supplement to Nothnagel's zu Spezielle Pathologie und Therapie, Holder, Wien und Leipzig, 1911.
2. Quénu, J.: Les hernies diaphragmatiques, étude clinique et opératoire, Paris, Arnette, 1920.
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4. Carman, R. D., and Fineman, S.: Roentgenologic Diagnosis of Diaphragmatic Hernia, Radiology **3**: 26 (July) 1924.
5. Morrison, L. B.: Diaphragmatic Hernia of Fundus of Stomach Through the Esophageal Hiatus, J. A. M. A. **84**: 161 (Jan. 17) 1925.

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through the esophageal hiatus in 3,500 cases of gastric disease studied roentgenologically. During the following year, his series [6] had increased to fifty-three. In 1926, Pancoast and Boles [7] published reports of fifteen cases of nontraumatic, left diaphragmatic hernia. Hedblom [8] found thirty-two cases of hernia through the esophageal orifice in 163 cases of diaphragmatic hernia, an incidence of more than 20 per cent. Akerlund [9] reported thirty cases of hiatus hernia in 1926 and

Fig. 1.—Esophageal orifice hernia. The herniated portion of the stomach is completely filled with the opaque mixture. It lies above and to the right of the cardia, overlapping the shadow of the spine. The hernia connects directly with the cardia by a narrow isthmus at the esophageal opening of the diaphragm.

noted that in his review of the literature he had been able to find sixty cases. My series comprises sixty cases of esophageal orifice hernia. These occurred over a period of five years and were all diagnosed during the roentgen examination of the alimentary tract. During this time, I have examined a total of about 8,000 gastro-intestinal cases with the barium sulphate meal.

The apparent rarity of this lesion previous to the advent of the roentgen examination is not difficult to explain. This type of hernia has neither a definite history nor typical signs, so that clinical diagnosis is extremely difficult. As this lesion occurs in a situation very difficult of access surgically and in a region seldom explored during abdominal operations, the surgeon is not apt to discover the existence of the hernia. At autopsy, the muscular relaxation and decreased intra-abdominal pressure make it easy to overlook the presence of this condition. The roentgen examination is therefore the best method of revealing the hernia and is usually the only means of arriving at a diagnosis.

6. Healy, T. R.: Symptoms Observed in Fifty-Three Cases of Nontraumatic, Diaphragmatic Hernia, Am. J. Roentgenol. **13**: 266 (March) 1925.
7. Pancoast, H. K., and Boles, R. S.: Nontraumatic Left Diaphragmatic Hernia, Radiology **3**: 26 (July) 1924.
8. Hedblom, C. A.: Diaphragmatic Hernia, J. A. M. A. **85**: 947 (Sept. 26) 1925.
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ETIOLOGY AND PATHOLOGY

Enlargement of the esophageal hiatus of the diaphragm with resultant herniation of a portion of the cardia of the stomach into the thorax may be congenital or acquired. The former type is subdivided into two groups: (*a*) congenital maldevelopment of the diaphragm with improper fusion of its component parts and (*b*) delayed descent of the stomach. If the former defect involves the region of the esophageal orifice, a hernia of the hiatus type results. The stomach is a thoracic organ during early embryonic life. After its migration into the abdomen, the various parts of the diaphragm meet and fuse, leaving a small opening for the esophagus. If the stomach is delayed in its descent, the diaphragm at the time of fusion of its component parts finds the stomach instead of the much smaller esophagus lying partially in the thorax and partially in the abdomen. This results in an enlargement of the esophageal hiatus. The stomach usually completes its descent at a later period. In very rare instances the shortening of the esophagus persists permanently, causing a condition known as thoracic stomach.

The acquired type of esophageal orifice hernia is due to increased intra-abdominal tension. This heightened tension may be caused by one or more of the following conditions: marked constipation; pregnancy; severe, prolonged physical exertion; a blow on the abdomen; obesity, which increases the deposit of fat in the omentum, mesentery and subperitoneal tissues; enlargement of the prostate with consequent straining; chronic cough; tight abdominal bands and ascites. In

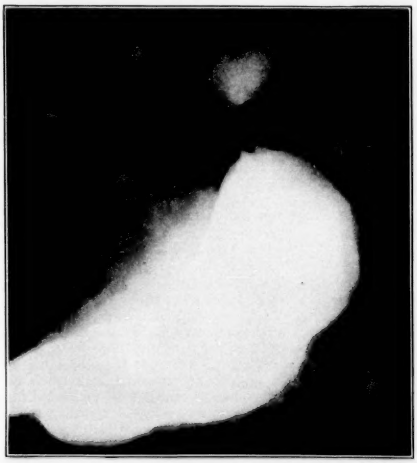

Fig. 2.—Esophageal orifice hernia. The hernia is partially filled with the opaque mixture and also contains gas as evidenced by the area of increased radiance just above the left diaphragm.

addition to these, there must in each instance exist some unknown condition which accounts for the herniation being through the esophageal orifice rather than at one of the more common sites of hernia. A congenital weakness of the musculature of the diaphragm is probably the determining factor.

The degree of enlargement of the esophageal hiatus may vary widely. Normally, the orifice admits one

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finger. In the cases of hernia, the opening may admit two fingers or at the other extreme be so large that the entire hand can pass through freely. The size of the hernia depends on the width of the aperture in the diaphragm, the degree of intra-abdominal tension, and the amount of fluid and gas in the stomach. The position of the patient is also important in this respect, as the hernia is most apt to reduce itself with the patient upright and is usually largest in the recumbent position.

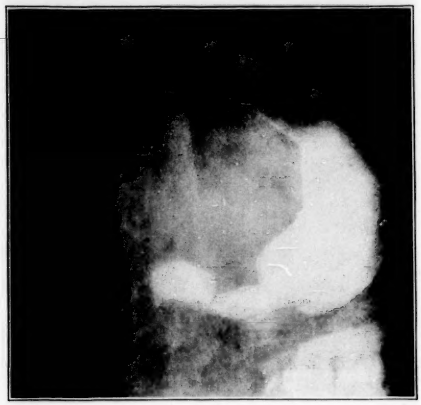

Fig. 3.—Esophageal orifice hernia. The hernia contains only a small amount of the barium meal. The gastric rugae are well shown above the diaphragm, overlying the shadow of the heart.

The smallest hernia was about the size of a walnut and the largest included the entire upper half of the stomach, with almost every possible variation between these extremes.

In the greater proportion of cases, the hernia was to the left of and behind the esophagus. Occasionally, the herniated portion of the stomach partially encircled the esophagus. Very large hernias may displace the heart to the right. It is interesting to note that in the five year period during which my cases occurred, I found no hernia through either the aortic or the vena cava openings in the diaphragm. This is probably because herniations rarely if ever occur through these orifices. The aortic hiatus is an osseo-aponeurotic foramen formed by the tendinous arch of the diaphragm being thrown across the anterior portion of the bodies of the vertebrae from the crus on one side to that on the other; it is therefore really behind the diaphragm. The foramen for the vena cava is tendinous and roughly quadrilateral, and the highest of the diaphragmatic apertures. Because of their situation and structure, these openings do not lend themselves to dilation.

The present series comprised forty-one women and nineteen men. The ages varied from 21 to 72 years. The distribution by decades was as follows: 21 to 30 years, four cases; 31 to 40, eight cases; 41 to 50, eighteen cases; 51 to 60, sixteen cases, and 61 to 72, fourteen cases.

Our clinic is composed almost entirely of adults, which is probably the reason for the youngest patient in this series being 21 years of age. Numerous cases are on record in very young people. The majority of the patients are in the "cancer age" and several were referred to the x-ray department with the clinical diagnosis of probable carcinoma of the stomach.

SYMPTOMS

In fourteen cases of this series, there were no symptoms which appeared to be due either directly or indirectly to the hernia. These patients were referred for roentgen examination with the following clinical diagnoses: intestinal obstruction, three cases; ascites, five cases; appendicitis, three cases; pulmonary tuberculosis and tuberculous enterocolitis, three cases. The hernias were usually small, varying in size from a walnut to a plum, and were discovered during the routine roentgen studies of the gastro-intestinal tract. It appears probable that the hernias were present for long periods without causing ill effects. These patients may, of course, develop symptoms later. It is interesting to note that most of these cases presented those etiologic factors which were just enumerated as important in the causation of this type of hernia.

In the remaining forty-six patients, there were symptoms of varying severity but in each case sufficient to cause the patient to seek medical advice. In only three instances was there any other demonstrable pathologic change to which the complaints might have been ascribed. As a rule, the symptoms were mild or moderate, being severe in only six or seven cases. The duration was on the average from three to four years, the shortest being six months and the longest fifteen years. In none of the cases did the hernia cause a condition

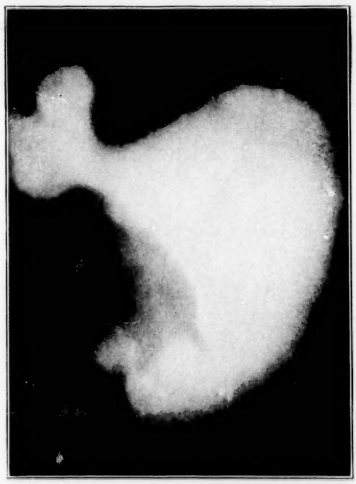

Fig. 4.—Esophageal orifice hernia. The hernia is oval. Its connection with the cardia is well shown. The lower end of the esophagus is also filled with the opaque mixture and is partially encircled by the hernia.

which could be classed as acutely surgical, requiring immediate operation. While incarceration and strangulation are theoretically possible, these complications did not occur in any of our patients.

The commonest complaint was pain in the epigastrum, which was present in thirty-one cases. The pain varied widely from a sensation of pressure to moderately severe colic. Most commonly, it was described as a dull,

heavy ache under the xiphoid. Radiation was rarely present. In four patients, this sensation "went through to the back" and in three others it radiated to the right and left. The time of occurrence of the pain was very variable. Most frequently, it came on during or soon after a meal. In several, the first few mouthfuls of food caused distress. In these patients, a hot drink or resting for a short while often gave relief. In other instances, it was necessary to get up and walk about for a few moments, after which the remainder of the meal could be finished in comfort. This was probably due to the fact that the herniated portion of the stomach became filled with the first swallows of food, causing the sensation of weight and pressure. Following rest, the drinking of hot liquid or walking about, the hernia reduced itself and no further discomfort was experienced. This is one of the most typical symptoms of this lesion and I have been able to diagnose the presence of a hernia clinically in several cases on the basis of this complaint. In general, the pain was less apt to be present or was relieved more quickly if the patient was sitting or standing and was aggravated by the recumbent position. In some instances, the distress was said to occur before eating and, in a few others, two or three hours after meals. In five patients there was pain during the night. Eleven stated that food increased the pain; in seven, food, sodium bicarbonate or a hot drink gave relief. The remainder showed no reaction to the taking of food.

Heartburn was present in twenty-six cases; gas and belching in twenty-two and nausea and vomiting in twenty-five and twenty, respectively. In eight cases, vomiting, usually of small to moderate amounts, occurred during the course of the meal with complete relief thereafter, so that the remainder of the meal could be finished without discomfort. The time of vomiting varied from a few minutes to several hours after eating. Five patients noted blood in the vomitus. This is believed to be due to the presence of small ulcerations in the herniated portion of the stomach. Regurgitation was complained of in sixteen cases, most frequently in the morning soon after awakening. Dysphagia was present in three cases and was doubtless caused by the pressure of the herniated portion of the stomach on the lower esophagus. This symptom, although rare, is of great importance, as all of these patients were thought to have early carcinoma of the esophagus clinically. Constipation was an outstanding complaint, being present in thirty-two cases. This gives a percentage of more than 50 in our series, which is a higher incidence than in a group of unselected patients of the same age periods. The straining at stool incident to the constipation is doubtless a factor in causing the hernia.

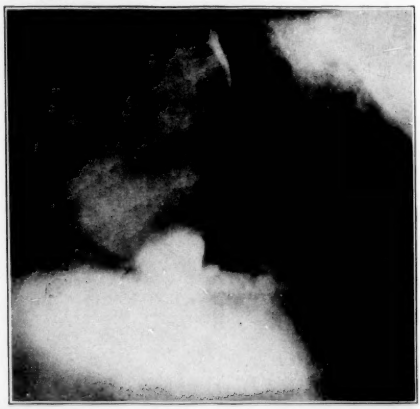

Fig. 5.—Esophageal orifice hernia. Lateral view of the chest showing the esophagus partially filled with the opaque mixture and the hernia lying just above the diaphragm. The hernia is anterior to the lower part of the esophagus in this instance.

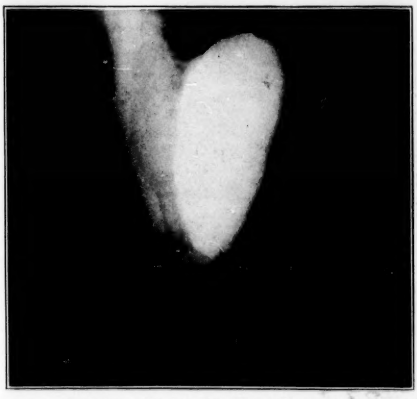

Fig. 6.—Eventration. The left side of the diaphragm and the stomach are markedly elevated. Attention is called to the relation of the esophagus to the stomach. Fluoroscopic observations demonstrated that there was no herniation, the stomach lying entirely below the diaphragm.

Seven of the patients in this series had one or more abdominal operations without relief. Several others had been advised to have operations with various clinical diagnoses. Three patients had had the gallbladder removed and two the appendix. One patient had an exploratory laparatomy and was informed that no pathologic condition had been found. The seventh of this group had been operated on three times within the past five years; first, for the removal of a "chronic appendix;" then for a cholecystectomy, and finally for adhesions. She presented a hernia the size of a plum which had probably been the cause of her symptoms, as her complaints were the same after the operations as before. Five patients had previously been studied roentgenographically and informed that there was no pathologic process in the gastro-intestinal tract.

PHYSICAL SIGNS

Small or medium sized hernias give no physical signs. Large hernias simulate pneumothorax or hydrothorax in rare instances. Splashing, gurgling and similar sounds may occasionally be heard over the lower portion of the left chest.

ROENTGEN OBSERVATIONS

Roentgen study is of the utmost importance in esophageal orifice hernia because it usually is the only means of arriving at a diagnosis before operation. The technic of the roentgen examination is difficult and must be carried out with great accuracy and care. The presence of a hernia may be detected occasionally with the patient in the erect position. If the sac is filled

with air, the gas bubble can be visualized above the diaphragm. The herniated portion of the stomach may contain both air and liquid, in which case the fluid level with gas above gives a clue to the diagnosis. Even on the ingestion of the opaque meal, fluoroscopic studies with the patient standing only rarely demonstrate the presence of a hernia. In only three cases of our series did the pouch fill while the patient was in the erect position, and in two of these the hernia reduced itself and disappeared during fluoroscopy. As a rule therefore, the examination in the standing position gives no intimation of the existence of this lesion. If the roentgen studies are carried out in this position only, as is done in some clinics, these hernias will be overlooked.

It is with the patient lying on the fluoroscopic table and the stomach well filled with the opaque mixture that the hernia is most apt to be visualized. There is no single position in which it is possible to bring the lesion into view in every instance. It is essential to observe the patient in the prone, supine and oblique positions. Deep inhalation and exhalation should be advised during the time of observation. Pressure on the abdomen with the gloved hand is important to force the gastric content into the cardia. Lowering the head of the table or placing a pillow under the buttocks is an important maneuver.

Roentgenograms of this lesion are difficult to obtain and even with the most careful technic frequently fail to show the hernia. This is due to the fact that the hernia is usually relatively small and is overlapped by the diaphragm, the cardiac shadow, the spine, and, in females, the breasts. Numerous films in different positions are necessary. In several instances, the hernia has been visualized fluoroscopically but could not be demonstrated on the roentgenograms. The most satisfactory procedure for overcoming this difficulty is to determine the best position for demonstrating the lesion with the fluoroscope, and then to replace the fluoroscopic screen with a film and make the exposure with the same tube that was used during fluoroscopy. Serial roentgenograms may be of great value.

After the ingestion of the barium meal, the herniated portion of the stomach is seen as a round or ovoid shadow lying just above the diaphragm in the region of the lower end of the esophagus. The hernia is usually near or in the median line and projects more to the right than does the lesser curvature. As a rule, there is a direct connection between the opaque medium in the upper portion of the cardia and the barium in the hernia, the two being united by an isthmus at the level of the esophageal hiatus. In some instances, the lesion lies entirely above the diaphragm and does not appear to connect directly with the stomach. The size and shape of the hernia may vary with the degree of filling, the patient's position, the phase of respiration, and the amount of intra-abdominal tension. When the herniated portion of the stomach is completely filled with barium, it is seen as a smooth, sharply defined shadow which is of uniform density throughout. If it is only partly filled with the opaque mixture and contains air also, the gas collects in the upper portion, giving a mottled shadow. With the patient standing, a fluid level with a horizontal upper border is seen. If the sac contains only a little barium, the rugae of the stomach are visualized. This is a very important observation as it proves conclusively that the shadow lying above the diaphragm actually is a portion of the stomach. The lesion may reduce itself during the roentgen examination. This occurs most commonly when the patient turns or changes from a lying to a standing position. While reduction and consequent disappearance of the hernia increase the difficulties of diagnosis from the roentgenologic point of view, this phenomenon is very important clinically as it proves the absence of adhesions and that there is little or no danger of incarceration.

The relation of the esophagus to the hernia should be studied carefully in every instance. This is best accomplished by giving the patient a few additional swallows of the opaque mixture after the hernia has been visualized. Films may be made while the liquid is being swallowed or fluoroscopic studies may be carried out. Usually, the lower esophagus is seen to be normal. Rarely, it may be tortuous, the tortuosity disappearing when the hernia reduces itself. In two of our patients who complained of dysphagia, there was slight dilatation of the esophagus with delay at the lower end, apparently due to the fact that the hernia pressed on the esophagus and caused a partial obstruction. The hernia may be to the left, right, front or back of the esophagus; in some cases it may partially surround the esophagus. The stomach usually rises high, so that the cardia lies in close contact with the diaphragm. In several cases, the stomach appeared to be more to the right than normally. The cardia may be smaller and much less rounded than usual.

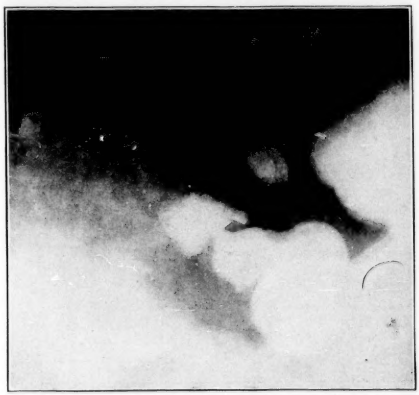

Fig. 7.—Diverticulum of the stomach. The barium-filled diverticulum lies just medial to the cardia and below the diaphragm. At the six-hour observation, the stomach was empty but the diverticulum remained filled with the opaque mixture.

DIFFERENTIAL DIAGNOSIS

From the clinical standpoint, the common conditions to be considered in differential diagnosis are carcinoma of the stomach, peptic ulcer, gallbladder disease, carcinoma of the lower end of the esophagus, and angina. Each of these conditions usually has its typical history and clinical evidence. It is in atypical or borderline cases that diagnosis becomes difficult and the possibility of esophageal orifice hernia should be considered. If this lesion is borne in mind, both the clinician and the roentgenologist will diagnose it with greater frequency. As more cases of this type of hernia are recognized and recorded in the literature, the clinical picture will become more clearly defined and this condition will take its rightful place as a not uncommon cause of upper abdominal symptoms.

From the roentgen point of view, it is necessary to consider the following conditions in differential diagnosis: diaphragmatic hernia of other types; diverticulum of the lower esophagus; diverticulum of the stomach; cardiospasm; cardio-esophageal relaxation; eventration. Diaphragmatic hernias of other than the esophageal orifice type may be the result of a congenital abnormality, severe trauma to the abdomen, a gunshot injury or a stab wound. These hernias may involve any part of the diaphragm. In esophageal orifice hernia, only the stomach passes into the thorax. Portions of the small intestine, the colon, the stomach and other abdominal organs may be involved in the other types of diaphragmatic hernia. The relation of the esophagus to the lesion may be demonstrated roentgenologically by the use of the opaque meal, proving conclusively whether the lesion involves the esophageal orifice or some other portion of the diaphragm. Diverticulum of the esophagus is attached to the esophagus and always lies in direct contact with it. The shadow of a hernia

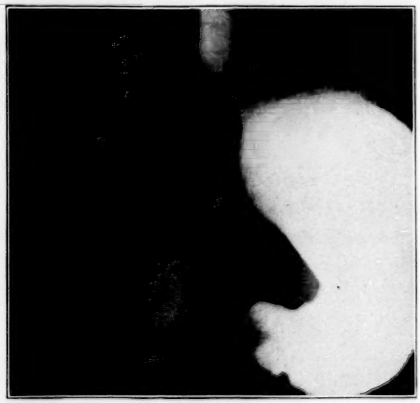

Fig. 8.—Cardio-esophageal relaxation. The opaque meal flows back into the esophagus from the stomach. This condition can be differentiated from esophageal orifice hernia by giving the patient a few swallows of barium and demonstrating that the shadow above the diaphragm is the esophagus and not a portion of the cardia of the stomach.

through the esophageal orifice can be shown to be connected with the stomach and may be differentiated from the esophageal outline as the patient is studied in the various positions fluoroscopically. A diverticulum fills directly from the esophagus while a hernia, as a rule, fills from the stomach. The former is usually well above the diaphragm and is best seen with the patient erect; the latter lies in direct contact with the diaphragm and is seldom visualized except in the recumbent position.

Diverticulum of the stomach is a projection from the gastric lumen and is below the level of the diaphragm. There is very frequently retention of some of the barium mixture in the diverticulum after the main mass of barium has passed out of the stomach, while an esophageal orifice hernia empties itself during the emptying of the stomach. A diverticulum is best visualized with the patient erect, while an esophageal orifice hernia is rarely seen in this position. Cardiospasm is an obstruction of the lower end of the esophagus with dilatation of the esophagus of varying degree and should not cause confusion. In cardio-esophageal relaxation, the opaque meal flows freely into the stomach and then runs back into the esophagus when the patient is recumbent. There is no circumscribed shadow above the diaphragm as in esophageal orifice hernia, and fluoroscopic studies make the differential diagnosis easy. Eventration is an elevation of the diaphragm with a resultant high position of the stomach, splenic flexure, and small bowel. The differentiation between this condition and esophageal orifice hernia depends on the visualization of the diaphragm and the demonstration that in eventration the stomach lies below the elevated diaphragm. This is usually possible after the administration of a barium sulphate meal. If this method fails, the diaphragm may be visualized by administering a compound effervescing powder in order to distend the stomach with gas. Fluoroscopic observations with the patient in the erect position after the stomach has been filled with gas or the opaque meal have always enabled me to demonstrate the position of the diaphragm and thus determine whether I was dealing with eventration or an orifice type of hernia.

TREATMENT

The medical treatment of esophageal orifice hernia is symptomatic and consists mainly of dietetic and preventive measures. Thorough mastication, slow eating and small meals are advisable. Fluid in considerable amounts may be taken with the meals. The patient should not lie down after having eaten. If distress comes on during or soon after eating, walking about for a few moments or a hot drink usually gives relief. The avoidance of straining, tight bands about the abdomen and other causes of increased intra-abdominal pressure is important. If the symptoms are severe and unrelieved by medical treatment, surgery may be resorted to. The operation is difficult and should be undertaken only after careful consideration of the patient's general condition. The abdominal approach is preferable. A large incision is necessary, adequate exposure being the first requisite. The hernia is reduced completely and the esophageal opening of the diaphragm sutured to its normal size. As the difficulties of operation are greatly increased by the respiratory movements of the diaphragm, phrenicotomy may be performed on the left side as a preliminary step. In patients who cannot undergo the extensive abdominal operation necessary to cure an esophageal orifice hernia, phrenicotomy may give symptomatic relief. Fortunately, the complaints are mild in the great majority of cases and surgical intervention is rarely necessary. Only three cases of our series came to operation.

SUMMARY

An esophageal orifice hernia is a protrusion of a portion of the cardia of the stomach through the esophageal opening of the diaphragm into the thorax. This type of diaphragmatic hernia was formerly considered very rare and therefore of but slight clinical significance. With the increasing use of the roentgen ray in the examination of the gastro-intestinal tract, it is being found with increasing frequency and several large series of cases have been reported during the last decade.

The present series consists of sixty cases, all diagnosed during the routine roentgen examination of the stomach with the opaque meal. These occurred over a period of five years, during which time about 8,000 gastro-intestinal cases were studied roentgenologically.

Enlargement of the esophageal orifice of the diaphragm with resultant herniation of the cardia may be

congenital or acquired. The acquired cases are due to increased intra-abdominal tension plus some unknown factor which accounts for the herniation being through the esophageal hiatus rather than at one of the commoner sites of hernia.

My series comprised forty-one females and nineteen males. The ages varied from 21 to 72 years, the majority of the patients being over 40.

In fourteen patients there were no symptoms referable to the hernia. The remainder had complaints of varying degrees of severity. The commonest symptoms were epigastric pain, heartburn, nausea, vomiting, regurgitation and constipation. As a rule, the symptoms are rather indefinite, mild in degree, and of years' duration. The most typical complaint was a feeling of weight or pressure under the xiphoid, coming on during or soon after eating and relieved by a hot drink or by walking about for a few moments.

Small hernias give no physical signs. Large hernias may simulate pneumothorax or hydrothorax.

The roentgen examination is usually the only means of arriving at a diagnosis. Very careful studies are essential to demonstrate this lesion. Fluoroscopic observations in the prone, supine and oblique positions must be made, as the hernia is only rarely seen with the patient erect and is difficult of roentgen demonstration.

After the ingestion of the opaque meal, the hernia is seen as a round or ovoid shadow just above the diaphragm; it lies in or near the median line, usually to the left of the esophagus. The hernia as a rule connects with the stomach by an isthmus at the level of the esophageal orifice.

Roentgenologically, this condition must be differentiated from diaphragmatic hernia of other types, diverticulum of the esophagus and stomach, cardiospasm, cardio-esophageal relaxation and eventration.

Treatment consists mainly of dietetic and preventive measures. Surgical operation is indicated if the symptoms are severe. As a rule, however, the complaints are mild and operative measures are only rarely necessary.

485 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

DR. A. L. GRAY, Richmond, Va.: This paper is a monograph on esophageal orifice hernia that should be in the laboratory of every roentgenologist. It is the most complete discussion of the subject that I have ever heard. There are several points on which I should like to lay a little additional stress. Many of the small laboratories throughout the country have only a vertical fluoroscope, and it is absolutely impossible, as the author stated, to show a reducible hernia of the esophageal orifice with an upright fluoroscope. If it is incarcerated we may be able, as he said, to see an air bubble or gas bubble above the diaphragm. That, however, would not be differentiated from a lower end esophageal diverticulum. However, in incarcerated conditions I have occasionally been able to suspect and therefore search more diligently for the real condition by reason of a longitudinal shortening at the expense of the upper pole of the stomach. Of course, the shortening alone would not differentiate between an esophageal hernia and an extensive carcinomatous lesion of the cardiac end of the stomach. The only real method of determining the presence of esophageal hernia is by the dorsal position and preferably with the hips well elevated above the level of the shoulder; or sometimes it may require an almost complete inversion, such as is possible by means of our modern tables. The lateral position, the patient being rotated toward the left side, will often give us valuable information. It is my routine, after making an upright fluoroscopic examination, to place the patient in the dorsal position with pressure on the lower pole of the stomach, and then to rotate the patient toward the left side. If the upper pole of the stomach is smooth and there is no tendency to herniation, I then rotate the patient gradually toward the right side, making careful observations all the time.

DR. CASSIE BELLE ROSE, Chicago: In the Presbyterian Hospital of Chicago, we search for these esophageal herniations in all examinations of the stomach and find them often enough to make this routine worth while. In my experience, the differentiation from carcinoma of the lower end of the esophagus is the important point. If, in the patients with symptoms, the patient gets the idea that he has a cancer and one can definitely say that he has not—that he has only an esophageal herniation—the mental relief of the patient is worth a great deal. Then, in fact, the differential diagnosis becomes the chief treatment.

DR. MAX RITVO, Boston: In the past, there has been no agreement among authors as to a name for these hernias. In the literature, we find papers on this subject entitled, "Herniation of a Portion of the Fundus of the Stomach Through the Esophageal Hiatus of the Diaphragm," "Diaphragmatic Hernia of the Stomach Through the Esophageal Opening," and so on. These names are descriptive, but very long and too cumbersome for ordinary use. If we as roentgenologists can agree on a short, simple title, it will help the study of this condition greatly. The name "esophageal orifice hernia" has the great advantage of conciseness, as well as describing what the condition is and where it is. The traumatic type of diaphragmatic hernia has not been included as it does not come into the group under discussion. As the result of severe trauma to the abdomen, the diaphragm may be ruptured. The stomach, intestines, spleen and various other abdominal organs may herniate through this opening into the thoracic cavity. In the esophageal orifice type of hernia, however, only the stomach is involved and even with very large hernias we have never seen any organ other than the stomach herniate into the thorax.

ACCIDENTAL PNEUMOTHORAX*

JOSEPH L. HARVEY, M.D.
DENVER

My object in this paper is to contrast two cases of pneumothorax which followed fractured ribs. Only one case similar to case 2 was found in the literature.[1] The term pneumothorax was probably first used in 1803 by Itard to denote air or gas in the pleural cavity. Hippocrates noted the succussion splash, and Laënnec in 1819 gave such a thorough description of the symptoms and signs that little has been added since.

Pneumothorax is regarded by some as of very minor importance; by others as an extremely serious condition. Most interns believe that pneumothorax is such a simple matter that they are fully qualified to perform artificial pneumothorax. In Denver, even simultaneous bilateral artificial pneumothorax is being done now in selected cases. The first paragraph of the chapter on pneumothorax in Fishberg's book on Pulmonary Tuberculosis emphasizes the other view:

> This is the most frightful complication of pulmonary tuberculosis. It is of more significance than copious pulmonary hemorrhage because the latter only terrifies the patient, and the ultimate prognosis is usually favorable, but pneumothorax is deadly and the victim is justified in his apprehension that the collapse and agonizing dyspnea are indications that he is breathing his last. From West's statistics it appears that 70 per cent of patients attacked by pneumothorax die, and in phthisis the proportion is even higher.

These statistics[2] are also quoted in the 1927 edition of Osler's Practice of Medicine. The difference between these

* From the Department of Roentgenology, University of Colorado School of Medicine and Hospitals.
* Read before the Section on Radiology at the Eighteenth Annual Session of the American Medical Association, Portland, Ore., July 12, 1929.

1. Sante, L. R.: Massive Collapse of the Lung, Am. J. Roentgenol. **20**: 213 (Sept.) 1928.
2. Lancet, 1897.

extreme views can be partially accounted for by the fact that one refers to spontaneous pneumothorax with a rupture of the visceral pleura, while the other refers to a carefully controlled artificial pneumothorax. Recent data on pneumothorax give a mortality of from 10 to more than 80 per cent, depending on the type of pneumothorax, and the time interval allowed before death occurs.

REPORT OF CASES

CASE 1.—Mrs L. S., aged 27, was injured in an automobile accident in December, 1928. Her chief complaint was pain in the right side of the chest, localized over the lower ribs. There was no expectoration of blood. At the age of 15 she had been kicked by a horse and three ribs on the right side were broken; otherwise she had never been sick or injured.

On examination the patient was very pale and in shock. Other observations were irrelevant, except for the chest. There was crepitation of subcutaneous air over the lower ribs and in the right axilla, and extreme hyperresonance over the entire right side of the chest.

The apex beat was strong in the fifth interspace in the left axilla.

Roentgen examination showed a recent fracture of the tenth rib with some displacement; the mediastinum was displaced 7 cm. to the left; the heart was displaced tightly against the left axillary chest wall, and the right half of the diaphragm was concave, depressed down to the twelfth rib.

A diagnosis of enormous pneumothorax and fractured rib was made (fig. 1).

For the first four days 1,000 cc. of air was aspirated daily, with constant improvement. After the removal of the first thousand cubic centimeters of air there was a drop in the pulse rate from 120 to 86 per minute. On the second day the left border of the heart was 1.5 cm. from the chest wall; on the seventh day there was 4 cm. clearance. A small amount of fluid formed, which was gradually absorbed. On the sixteenth day roentgen examinations, before and after the aspiration of a large amount of air, showed an increase in the amount of air after the aspiration, proving a valvular pneumothorax. There has been little, if any, change in the pneumothorax for six months (fig. 2).

Fig. 1.—Enormous pneumothorax following fracture of tenth right rib.

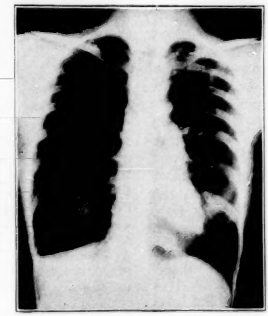

Fig. 2.—Degree of pneumothorax which is persistent after six months.

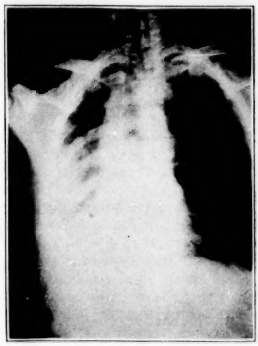

Fig. 3.—Pneumothorax in upper right side of chest; lower right side dull; heart and mediastinum shifted markedly to the right.

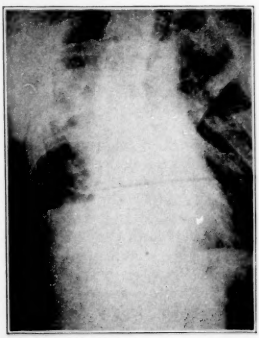

Fig. 4.—Oblique view, showing pneumothorax area more definitely and fluid (blood) level.

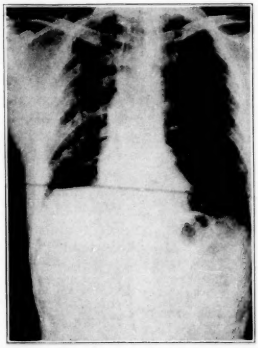

Fig. 5.—Forty-eight hours after accident and a few hours after the coughing up of several blood clots. Definite return of heart and mediastinum toward normal position.

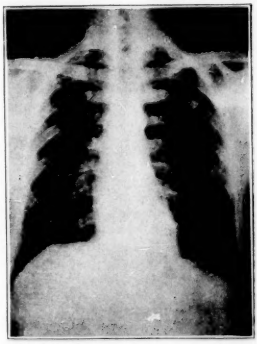

Fig. 6.—Three months after accident. There are slight evidences of old tuberculosis; thickened pleura is present over the site of the fractured rib.

CASE 2.—G. D. E., a man aged 38, who had come to Colorado sixteen years before on account of tuberculosis of the right apex, was admitted to the hospital following an automobile accident, Feb. 16, 1929. Examination showed lacerations and abrasions of the face and back; also a bruise of the left foot. On coughing or deep respiration he had pain just lateral to the right nipple, and restriction of motion on the right side. There was some hemoptysis for two hours following the accident. The total

amount of blood lost did not exceed 100 cc. The right side of the chest was dull up to the fourth rib anteriorly, hyperresonant above this, and tympanitic over the entire right side of the back. The percussion note was normal over the left side of the chest.

Roentgen examination on the following morning showed the heart and the mediastinum greatly displaced to the right (fig. 3). In the upper part of the right side of the chest was a definite area of pneumothorax and adhesions; posteriorly the air extended from the apex to a fluid level which was at the level of the right fifth rib anteriorly (fig. 4). There was a fracture of the right fourth rib in the axillary line. Forty-eight hours after the injury the patient coughed up several blood clots and the next morning there was almost complete return of the heart and the mediastinum to the normal position (fig. 5). Examination three months after the accident revealed the heart and mediastinum in normal position and pleural thickening over the site of the fractured rib (fig. 6). There were slight evidences of old pulmonary tuberculosis.

COMMENT

Patient 1 shows a typical valvular pneumothorax, partially relieved by aspiration but persistent over several months. The probabilities are that the right lung will not reexpand. In contrast, patient 2 shows a pneumothorax with hemorrhage into the lung. Part of this blood was expectorated and the rest clotted, plugging a bronchus. Massive collapse followed and was relieved by coughing up the blood clots. It is suggested that massive collapse is the explanation of the dulness occasionally found in cases of pneumothorax.

ABSTRACT OF DISCUSSION

DR. KENNETH D. A. ALLEN, Denver: It is rather remarkable that the literature tells us so little about atelectasis as a complication, or as a fundamental part of pneumothorax, for such it surely is. Of course, it is very rare, indeed, to see one case such as Dr. Harvey's, which demonstrates roentgenologic signs of both conditions. Many pneumothoraces, however, undoubtedly have as part of their fundamental pathologic changes a massive collapse of the lung on that side. Surely, as the air is introduced into the chest, the lung in its contraction gradually occludes larger and larger bronchioles and bronchi. The speed of this occlusion process depends somewhat on the amount of moisture in the bronchial tree. It appears, then, that these two conditions, in spite of the fact they have different roentgen signs, exist together. We can understand and read our plates in cases of pneumothorax to more advantage if we keep the atelectatic process constantly in mind. The two conditions show diametrically opposed roentgen signs. Pneumothorax shows depressed diaphragm, separated ribs, the heart displaced to the opposite side, a visible lung margin, and increased radiolucency. Atelectasis, when it exists alone, shows a raised diaphragm, no lung margin, compressed ribs, decreased radiolucency, and heart displaced to the affected side. Yet when there is pneumothorax, the two conditions may exist together with pneumothorax dominating the picture. There are, however, two roentgen signs which are common to these conditions: Under the fluoroscope, the heart moves to the affected side on inspiration in both conditions and both show compensatory emphysema of the opposite lung. The symptoms of massive atelectasis are almost identical with those of pneumothorax which has been incurred rapidly—a raised temperature, mild leukocytosis, dyspnea and anxiety—and I wonder whether the untoward symptoms of pneumothorax are not due to atelectasis. Perhaps in making an artificial pneumothorax, or removing excess air, if we would give more attention to maintaining the bronchial tree free from moisture by bronchoscopy or posture, we might get fewer untoward symptoms in the former and the lung would expand better in the latter instance.

DR. C. T. BURNETT, Denver: It is not the extent of the pneumothorax but the rapidity of development that determines symptoms. We produce occasionally pneumothoraces that are as extensive as this one. Ordinarily, as in Dr. Harvey's first patient, we attempt to avoid this marked mediastinal displacement. West's statistics were published in 1897, prior to the routine use of the roentgen ray and to the frequent demonstration of silent pneumothoraces. I believe that his statistics of 70 per cent are far too high. Bradford, in 1918, stated that no case had yet been seen in association with pneumothorax or with pleural adhesions, and emphasized the importance of this in relation to the theories on etiology. As late as 1928 Jacobaeus claimed priority in reporting two cases of massive collapse, one in acute pneumonia and one in a patient with profuse pulmonary hemorrhage. He suggests that in pulmonary hemorrhage massive collapse probably occurs with much greater frequency than we have thought. The collapse that was noted in this patient occurred sequential to trauma, but it differs from such cases in that definite pulmonary hemorrhage occurred. It is much easier to explain on the basis of bronchial plug. However, there is the trauma, and one has to consider the possible reflex effect in producing the massive collapse. Regarding Dr. Allen's suggestion that massive collapse occurs commonly in pneumothorax, I rather question that. We produce pneumothorax in the presence of potential infection; in fact, there is always infection when we produce it, and it is frequently secondary infection. It seems to me that if, when inducing pneumothorax, we were also inducing massive collapse, we would not have the excellent results that attend the use of therapeutic pneumothorax.

DR. JOSEPH L. HARVEY, Denver: We should keep definitely in mind that a compressed lung, a massive collapse and an atelectasis are distinct, whether the lung is compressed by air in the pleural cavity or fluid in the pleural cavity. Of course, the air is out of the alveoli as well; but in massive collapse we have quite a distinct disease, which we should not confuse with a compressed lung.

RELATION OF VINCENT'S ANGINA TO FUSOSPIROCHETAL DISEASE OF THE LUNGS *

DAVID T. SMITH, M.D.
RAY BROOK, N. Y.

There is considerable evidence in the literature for the belief that the anaerobic organisms present in Vincent's infection of the upper respiratory tract may under certain conditions initiate a severe or even fatal pulmonary infection. Though the lesions in the lungs and bronchi generally occur as a complication of Vincent's angina, they are occasionally primary. These cases of fusospirochetal disease are usually sporadic, but at times the infection may definitely be traced from patient to patient. In this paper I give a brief summary of the reports in the literature and place on record three additional cases observed at the New York State Hospital for Incipient Tuberculosis in which fusospirochetal disease of the lungs followed exposure to cases of Vincent's infection of the upper respiratory passages.

Bruce [1] reported a case of primary Vincent's infection of the larynx and trachea with secondary extension into the tissues of the neck and into the lungs which resulted in death on the eleventh day after the onset. At necropsy, fusospirochetal organisms were recovered from all the lesions. Arrowsmith [2] observed a case in which the primary infection was in the larynx with subsequent extension to the lungs. The swelling of the larynx embarrassed the respiration to such a degree that a tracheotomy was performed. Pus from the trachea and sputum from the lungs contained Vincent's organism in practically pure culture. Gomez [3] saw a

* From the New York State Hospital for Incipient Tuberculosis.

1. Bruce, H. W.: Case of Vincent's Angina in Which the Larynx and Trachea Were Involved, Lancet **2**: 1021 (Oct. 2) 1907.

2. Arrowsmith, H.: Vincent's Angina Involving the Larynx Exclusively, Tr. Sixteenth Annual Meeting Am. Laryng. Rhinol. & Otol. Soc. **16**: 108, 1910.

3. Gomez, F. R.: Pleuresia purpulent y Gangrena pulmonar, Arch. latino-am. de pediat. **16**: 656 (Aug.) 1922.

Vincent's infection of the larynx in a child, aged 2½ years, extend into the lungs, producing abscess, empyema and death. Typical Vincent's organisms were cultivated from the lungs and pleural fluid at necropsy. Lewis and Barenberg [4] reported a similar case in a 3 year old child in whom a Vincent's infection of the larynx extended into the lungs, producing fatal pulmonary gangrene. Chevalier Jackson [5] studied with the aid of the bronchoscope a case in which the Vincent's infection of the pharynx was followed by ulceration of the bronchi. He made smears through the bronchoscope from the deep ulcers in the bronchi and found that the fusiform bacilli and spirochetes were present in practically pure culture. Two of my cases belong to this group in which there was direct extension of the infection from the upper respiratory tract to the lungs.

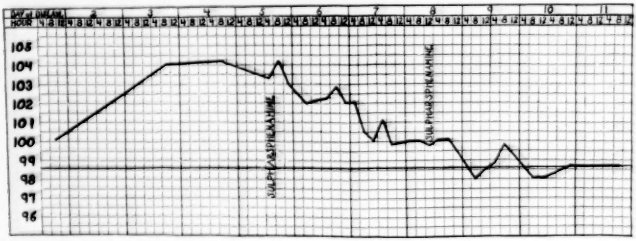

Fig. 1.—Temperature curve in case 3 showing the dates when sulpharsphenamine was administered.

In a second clinical type of this infection the primary lesion is found in the bronchi or lungs. Rothwell [6] in 1910 recorded two cases in which Vincent's organisms were present in large numbers in the bloody sputum. He named the disease "bronchial Vincent's angina." Campbell and Dyas [7] observed cases of primary acute bronchitis during an epidemic of Vincent's angina among Canadian troops stationed in England. They found large numbers of fusiform bacilli and spirochetes in the sputum from these patients. Peters,[8] Gifford,[9] McNeill,[10] Marshall,[11] Wahl,[12] Cahan,[13] Greeley,[14] Kline and Berger,[15] Pilot and Davis,[16] Rohdenburg [17] and I [18] have reported cases of primary infection of the lung and bronchi with these organisms. In my third case there were no signs of infection in the throat, the pulmonary lesion appearing four days after exposure to a patient with Vincent's angina.

4. Lewis, J. M., and Barenberg, L. H.: Pulmonary Gangrene Due to Spirochetes and Fusiform Bacilli, Am. J. Dis. Child. **37**: 35 (Feb.) 1929.
5. Jackson, Chevalier: Ulcerative Bronchitis Due to Vincent's Organisms, J. A. M. A. **83**: 1845 (Dec. 6) 1924.
6. Rothwell, J. H.: Bronchial Vincent's Angina, J. A. M. A. **54**: 1867 (June 4) 1910.
7. Campbell, A. R., and Dyas, A. D.: Epidemic Ulceromembranous Stomatitis (Vincent's Angina) Affecting Troops, J. A. M. A. **68**: 1596 (June 2) 1917.
8. Peters, W. H.: Hand Infection Apparently Due to Bacillus Fusiformis, J. Infect. Dis. **8**: 455 (June) 1911.
9. Gifford, S. R.: Fusiform Bacilli of Vincent's Angina, J. Bact. **5**: 365 (July) 1920.
10. McNeill: Pulmonary Infection with Spirochetes and Fusiform Bacilli of Vincent's, Bull. Johns Hopkins Hosp. **35**: 368 (Nov.) 1924.
11. Marshall: Infection of the Lungs with Vincent's Spirillum, Kentucky M. J. **23**: 1800 (July) 1925.
12. Wahl, H. R.: The Pathology of Some Unusual Pulmonary Lesions, South. M. J. **19**: 591 (Aug.) 1926.
13. Cahan, J. M.: Pneumonitis Caused by Vincent's Organism, M. J. & Rec. **125**: 194 (Feb. 2) 1927.
14. Greeley, Horace: Vincent's Angina Infection; Its Prevalence, Varied Manifestations, Treatment and Bacteriology, Am. J. M. Sc. **155**: 742 (May) 1918.
15. Kline, B. S., and Berger, S. S.: Spirochetal Pulmonary Gangrene Treated with Arsphenamine, J. A. M. A. **85**: 1452 (Nov. 7) 1925.
16. Pilot, Isadore; and Davis, D. J.: Fusiform Bacilli and Spirochetes: Their Rôle in Pulmonary Abscess, Gangrene and Bronchiectasis, Arch. Int. Med. **34**: 313 (Sept.) 1924.
17. Rohdenburg: Pathological Conditions Associated with the Presence of Fusiform Bacilli and Spirilla, Proc. New York Path. Soc. N. S. **24**: 177, 1924.
18. Smith, D. T.: Bronchopulmonary Spirochetosis, Am. Rev. Tuberc. **15**: 352 (March) 1927.

REPORT OF CASES

CASE 1.—O. B., a white man, aged 30, a laborer, had always been in good health before the present illness. Oct. 20, 1927, his wife developed tonsillitis, which was subsequently proved to be a Vincent's infection. About ten days later, November 1, the patient himself noticed general weakness and some soreness of the throat. The symptoms were more marked, November 2, so he remained in bed.

I saw him, November 3, when the temperature was 103 F. and the pulse 90. There was a slight fetid odor to the breath, and examination of the throat revealed a large necrotic ulcer on the right tonsil. Smears from the diseased area showed large numbers of typical Vincent's organisms. The lesion was treated by local applications of solution of potassium arsenite (Fowler's solution). The next day the throat was less painful, but during the night a cough had developed which was productive of about 20 cc. of thick greenish sputum without odor. Examination of the chest revealed a small area of râles just below the angle of the left scapula. There were no definite changes in percussion or in the breath sounds over this area. The sputum contained large numbers of fusiform bacilli and spirochetes indistinguishable morphologically from those in the tonsil of the patient and from the throat of his wife. A guinea-pig inoculated in the groin with 1 cc. of sputum developed a large fusospirochetal abscess.

November 5, the patient was much better, although the productive cough persisted. On the same day and on November 15, the patient was given 0.6 Gm. of sulpharsphenamine intravenously. A reexamination six months later failed to show any evidence of pulmonary disease by physical signs or a chest roentgenogram.

CASE 2.—H. D. H., a white man, aged 27, a physician, attended a patient with an acute Vincent's infection of the tonsils from May 22 to June 10. He assisted in the transfer of some of the membrane from the throat of the patient to the groin of two guinea-pigs and later performed an autopsy on the pigs. June 8, he noticed a slight pharyngitis which gradually increased in severity until June 14, when the tonsils became markedly swollen and inflamed and enlarged glands appeared in the neck. On that evening the patient became nauseated and vomited. There were general malaise and profuse perspiration on exertion, but he returned to work the next day as usual.

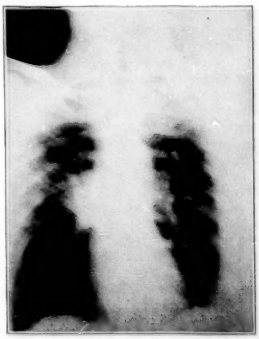

Fig. 2.—Chest roentgenogram in case 3 (portable apparatus) made at the height of the disease. The area of involvement in the right lung has been surrounded with a dotted line.

The tonsils presented the picture of a severe follicular tonsillitis, and smears from them showed cocci, vibrios, fusiform bacilli and spirilla. June 15, the throat was about the same but the cervical glands were more enlarged. On this day, subcutaneous injections of sodium cacodylate were started. By the next day the glands were less tender and slightly smaller. Dark field examination of the fluid from the tonsils showed spirochetes, fusiform bacilli, cocci and vibrios. Daily injections of sodium cacodylate were continued and the throat was swabbed twice daily with solution of potassium arsenite until June 20, when symptoms of mild stomatitis appeared and all medication was discontinued. The throat healed, the glands steadily decreased in size, but the malaise and the temperature of from 99 to 99.4 persisted.

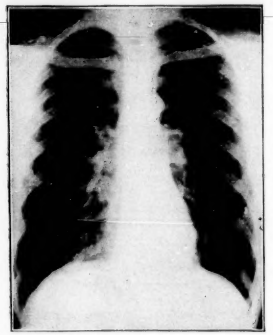

Fig. 3.—Roentgenogram of the chest in case 3, ten days later.

June 29, the temperature reached 101 in the evening and that night the patient had severe profuse sweats. The throat was not sore but there was a nonproductive cough and his family observed an extremely foul odor to the breath. He was admitted to the hospital, June 30. Physical examination revealed slight dulness near the left base in front, and râles were heard over this area when the patient coughed. The chest roentgenogram showed soft mottled shadows in this region. The day following his admission to the hospital he began to raise a small amount of green sputum which had a slightly foul odor. Examination of the sputum showed no tubercle bacilli, but spirochetes, fusiform bacilli, cocci and vibrios were present. The fresh untreated sputum in 1 cc. amounts produced a typical fusospirochetal abscess when injected into the groin of guinea-pigs. The guinea-pig that was inoculated with the concentrated sputum failed to develop tuberculosis.

For the first few days in the hospital the temperature varied from 98.6 in the morning to 102 and 103 in the afternoon. July 4, 0.45 Gm. of sulpharsphenamine was given intravenously, followed by 0.6 Gm., July 8. The day after the first treatment the cough was looser, and both cough and expectoration diminished rapidly and disappeared completely in a few days. A week later the temperature was normal, the physical signs had disappeared, and the chest roentgenogram showed the left base clear. After another week in bed the patient left the hospital, apparently convalescent. Shortly afterward, he began to register a temperature of from 99.6 to 100.6 and was readmitted, August 4. The physical examination and chest roentgenogram showed no evidence of the previous infection, but because of the persistent elevation of temperature, two more injections of sulpharsphenamine were given, August 15 and 20. He continued to have a temperature of from 99 to 99.8 two or three evenings in the week until November 15. A gain of 30 pounds (13.6 Kg.) was made during this period and he returned to work, Jan. 1, 1929.

Physical examination and a chest roentgenogram made six months later revealed no evidence of the disease. It is significant that in this patient, as in the one treated by Chevalier Jackson, the first pulmonary symptoms developed some time after the lesion in the pharynx had disappeared.

CASE 3.—W. W., a man, aged 29, a physician, four days after examining and treating the throat of a patient with severe Vincent's infection, returned home in the evening of Aug. 29, 1927, complaining of headache and backache. The symptoms grew worse during the next day and a slight cough developed accompanied by a small amount of mucoid sputum. That evening, August 30, the temperature was 102 F. August 31, he was very restless; the temperature reached 104 in the evening and was followed by a rigor and profuse perspiration. September 1, the sputum became purulent; he was slightly irrational, and the temperature reached 104.2, followed by rigor and perspiration. The following day, the patient was examined by a colleague, who found slight suppression of the breath sounds at the base of the right lung posteriorly but no other evidence of pulmonary disease. Specimens taken by me on the same day for blood, stool and urine culture were negative for typhoid bacilli, and the Widal reaction was negative. The blood count showed 12,000 white cells with a differential count of 83 per cent polymorphonuclears, 13 per cent lymphocytes and 4 per cent monocytes. The urine examination showed a trace of albumin, a moderate number of white blood cells and a few red cells but no casts. The sputum was thick, green and purulent, and about 30 cc. was expectorated. No tubercle bacilli were found, but enormous numbers of fusiform bacilli, spirochetes, vibrios and cocci were present (fig. 4 *B*).

The next day slight dulness, suppression of the breath sounds and a few râles were heard at the base of the right lung posteriorly and a chest roentgenogram revealed circumscribed shadows projecting out from the hilum into the right lung (fig. 2). In view of the presence of fusiform bacilli and spirochetes in the sputum the patient was given 0.6 Gm. of sulpharsphenamine intramuscularly on the afternoon of September 2, which was the fifth day of the disease. September 3, he was somewhat better, the temperature was 103.6, the pulse 100, and the respiration 20. The sputum remained unchanged in amount and in physical characteristics, but the microscopic examination showed only a few fusiform bacilli and no spirochetes. September 4, the temperature was 101.6 and numerous moist râles were heard over the area of dulness. The sputum was somewhat reduced in amount and thinner in consistency, and repeated examination failed to show either the large fusiform bacilli or the spirochetes, although all the other organisms were still present (fig. 4 *C*).

September 5, the patient was given 0.6 Gm. of sulpharsphenamine intravenously, following which the sputum rapidly decreased, the temperature returned to normal (fig. 1), and the physical signs in the chest disappeared. A chest roentgenogram made September 10 showed that the shadows had disappeared (fig. 3). After a few weeks' rest he returned to his practice and is still well and free from symptoms more than two years after his illness.

BACTERIOLOGY OF THE SPUTUM

The sputum in case 3 was thick, green, purulent and without odor. It was similar in appearance to tuberculous sputum, although at no time were tubercle bacilli demonstrated either by smear or by guinea-pig inoculation. The sputum was studied with various stains, the dark field apparatus and with aerobic and anaerobic cultures. Both the large and the small types of the fusiform bacilli[19] were isolated. The spirochetes were

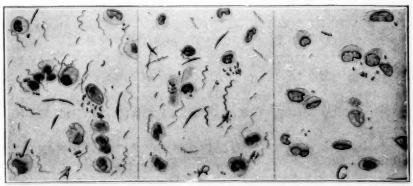

Fig. 4.—Camera lucida drawings of smears stained with gentian violet: *A*, smear from pharynx in case of Vincent's angina which was being treated by Dr. W. W.; *B*, smear from Dr. W. W.'s sputum before treatment; *C*, smear from Dr. W. W.'s sputum twenty-four hours after the first injection of sulpharsphenamine.

19. Smith, D. T.: Fusospirochetal Disease of the Lungs: Its Bacteriology, Pathology and Experimental Reproductions, Am. Rev. Tuberc. **16**: 584 (Nov.) 1927.

predominantly of the *Spirochaeta vincenti* type, with smaller numbers of *Treponema microdentium*; both were cultivated but only the latter were isolated in pure culture. The vibrio was not isolated but seemed to be identical with that usually found in Vincent's angina. Also *Staphylococcus albus*, hemolytic and nonhemolytic streptococci and an unidentified gram-negative gas-forming organism were isolated.

Two guinea-pigs were inoculated in the groin with 1 cc. each of sputum which was obtained on the fifth day of the disease and before the sulpharsphenamine was given. One pig died four days later with an abscess in the groin and multiple metastatic abscesses of the liver, lungs and spleen. The same combination of organisms was present in the metastatic abscesses as in the original sputum. The second guinea-pig was killed after ten days and a large well walled-off abscess found in the groin which contained the same organisms as the original sputum except the gram-negative gas-former, which is frequently eliminated by passages through a guinea-pig.[20] By inoculation of other animals in the groin, the disease was transmitted from pig to pig at ten day intervals for five passages.

Pus from one of these pigs was inoculated in 0.25 cc. amounts into the trachea of four rabbits. Two rabbits died of pulmonary gangrene and two of pulmonary abscess associated with empyema.

Sputum collected twenty-four and forty-eight hours after the patient had received his first injection of sulpharsphenamine had the same physical characteristics as the original, and contained the same organisms with the exception of the large fusiform bacilli and the spirochetes (fig. 4 *C*). Injection of this sputum into the groin of guinea-pigs resulted in a local swelling which resolved without producing an abscess.

Fortunately, at the time the physician (case 3) contracted the infection, a study of the bacteriology of Vincent's infection was being made at this hospital, and a complete record of the organisms present in the pharynx of his patient was available. It was found that the germs present in the physician's sputum were in all respects identical with those in the pharynx of his patient (fig. 4).

COMMENT

Vincent's angina, or fusospirochetal infection of the throat, is a relatively common and widespread disease and pulmonary complications due to these fusospirochetal organisms are by no means infrequent.

The complicating pulmonary lesions often confused with pulmonary tuberculosis may take the form of pulmonary gangrene, pulmonary abscess, ulceration of the bronchi, lobar pneumonia, bronchopneumonia, and empyema.

Many of these patients with pulmonary lesions recover spontaneously, but in some the condition terminates fatally. It seems advisable to treat all cases in which fusospirochetal organisms can be demonstrated in the pulmonary sputum with either neoarsphenamine or sulpharsphenamine. To obtain the best results the diagnosis should be made and the arsenic given before there is any appreciable destruction of pulmonary tissue. The cases recorded here were treated on the third, fourth and fifth days, respectively, of the illness.

CONCLUSIONS

1. The three cases of fusospirochetal disease of the lungs reported here followed contact with cases of Vincent's angina.
2. Two cases were primary infections of the pharynx with subsequent extension into the lungs.
3. The third case was primary in the lungs and began four days after contact with a case of Vincent's angina.
4. In all three cases recovery was prompt after the administration of sulpharsphenamine.

20. Smith, D. T.: Fusospirochetal Diseases of the Lungs, Tubercle 9: 420 (June) 1928.

Clinical Notes, Suggestions and New Instruments

VEIN RETAINER

R. E. TYVAND, M.D., CHICAGO

Every one at times has difficulty in entering the lumen of a vein for intravenous therapy. To aid in making a vein more accessible for this purpose and thereby simplifying intravenous

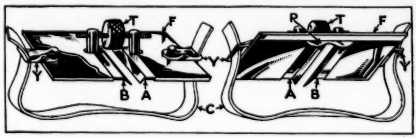

Fig. 1.—Diagrammatic representation of vein retainer.

work, the instrument presented here has been devised. To my knowledge, no similar device has been described in the literature or used by the medical profession.

The instrument consists of a metal frame piece, *F*, on the undersurface of which are fitted two shutter plates, *A* and *B*, with downward bent edges which can simultaneously be made to approach or diverge from each other by the turning of the thumb screw, *T*. The device is incorporated in a tourniquet cuff, *C*, as shown in figure 1, with self-retaining fasteners, *Y*, on each end of the frame piece.

Fig. 2.—Vein retainer in place on limb.

In applying the instrument a constriction may be placed about the extremity above the desired site of application, causing the veins to fill and stand out as much as possible. Then, with the shutter plates well apart, the device is placed over the vein in such a manner that the open rectangular area falls over the vein and parallel to it. At the same time the notched perpendicular piece *P*, attached to the underneath surface of the frame piece, falls across the vein. With gradual tension on the two ends of the cuff arrangement, pressure is brought to bear on the frame piece and by virtue of the notched perpendicular piece the vein tends to center in the aperture and

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remains in place as a result of the embedding of the downward bent edges of the shutter plates. With constant pressure on the frame piece the thumb screw is turned, closing the aperture from each side of the vein while it is held in place and at the same time releasing skin tension over the vein and permitting it to fill more completely. Thus, with the vein completely filled and held firmly in place, it is an easy procedure to insert a needle.

With the recent and rapidly developing demands for intravenous therapy, along with the injection treatment of varicose veins, I feel certain that this instrument will prove to be of benefit.

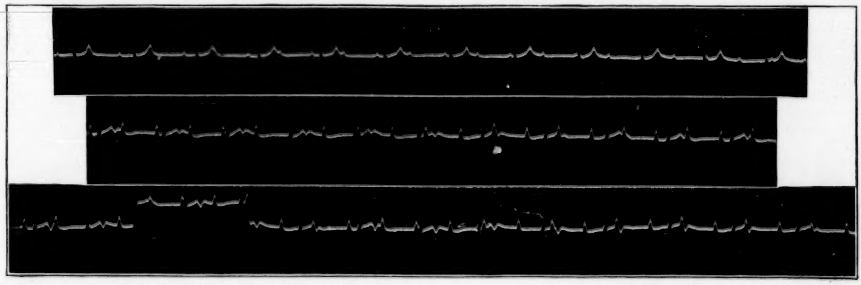
2449 Washington Boulevard.

ASYMPTOMATIC HEART BLOCK OF LONG DURATION

HAROLD THOMAS HYMAN, M.D., NEW YORK

The accompanying electrocardiogram shows a complete dissociation between auricle and ventricle. Each auricular beat occurs at an interval of 0.72 second (82 a minute) and each ventricular beat at 1.4 seconds (42 a minute).

The tracing in itself is not unusual, but the history of the patient from whom it was made is remarkable for its negativity. The man is now 57 years old and has had an equally slow heart rate since he was 12 years old, if not before. He remembers distinctly that he was always able to obtain sick leave from school by having his pulse rate counted. At the age of 2 and again at 10 he had some protracted fever, both of which attacks were called typhoid and the details of which are no longer obtainable, but they did not resemble diphtheria. Since his school days he has worked in all corners of the world under arduous physical and mental conditions and now occupies an executive position of enormous importance. Throughout all these years he has worked hard and played hard. He has smoked cigarets constantly; he drinks moderately; he cannot remember ever having had a sick day, and the tracing that is shown here was made simply as a part of a routine physical examination.



Dissociation between auricle and ventricle in a case of asymptomatic heart block of long duration.

He has been a patient of mine for fourteen years during which time I was always aware of his slow pulse but unfortunately never before made any electrocardiographic tracings because he had no symptoms or signs of cardiac disease and was quite aware of the fact that his pulse rate had always been slow.

There seems little doubt, therefore, that this heart block dates back at least forty-five years, if not longer, and probably originated in one of the infections of the patient's childhood. At the present time his physical condition is completely normal for a man of his age. The Wassermann reaction is negative. The aortic arch is somewhat dilated. The great vessels measure 5.4 cm. in the orthodiagram.

An extremely careful search of the literature and of the standard textbooks on cardiology fails to reveal any similar instance of a heart block of such long duration and rarely of one that is asymptomatic.

940 Park Avenue.

TRAUMATIC SEPARATION OF THE SYMPHYSIS PUBIS

THOMAS D. SPARROW, M.D., CHARLOTTE, N. C.

The literature is fairly prolific in reports of cases of separation of the symphysis pubis the result of parturition or some operative procedure incident to childbirth. There are records available of exceptionally few cases in which the separation of the symphysis has occurred from other types of trauma. Of these the majority have been due to falls.

G. Schaanning [1] reports a case in a pregnant woman, almost at term, who slipped and fell on the street. Willan [2] reports two cases and Buckley [3] one case resulting from falls from horses. Koven's [4] case was due to an automobile accident.

I have been unable to find a case similar to the one reported in this article, in which a weight applied to the anterior superior spines of the ilium resulted in a sacro-iliac dislocation and the folding out of the pelvic ring.

J. B. A., a man, aged 66, was admitted to the Charlotte Sanatorium because of pain across the lower portion of the abdomen. He stated that it had been necessary to jack up the rear wheels of his Ford truck in order to start the motor. This done, he did not notice that the car was in reverse gear. He lay down behind the car in order to lower the jack. As soon as the moving wheels struck the ground the car began backing and the rear wheel passed to the lower portion of the abdomen. The motor "stalled" with the wheel of the loaded truck resting on the anterior superior spines of the ilium. He remained in this position for several minutes until a sufficient number of men gathered to lift the truck. He felt a severe pain in the lower portion of the abdomen and when lifted to his feet he was unable to stand. He was carried immediately to the hospital.

The physical examination did not reveal anything abnormal in the head, neck or chest. There was marked extravasation of blood over the right iliac fossa, extending about 1 inch below Poupart's ligament and over the entire scrotum. The symphysis pubis could be felt to be widely separated (fig. 1). The patient was able to move both legs but the effort caused him severe pain. There was marked external rotation of both thighs, and adduction and internal rotation was impossible. A catheterized specimen of urine showed only a few cubic centimeters of urine in the bladder. Microscopic blood was present.

The patient was put to bed with a tight binder about the lower portion of the abdomen. Two days later he was suspended in the manner shown in figure 2. This suspension outfit consisted of two uprights with one longitudinally placed crossbar. The pelvis was placed in a hammock consisting of canvas, double thickness, about 1¼ yards long. The width of the canvas was sufficient to extend from the crest of the ilium to

1. Schaanning, G.: Rupture of the Pubic Symphysis, Norsk-Mag. f. Lægevidensk. **85**: 726-732 (Sept.) 1924; abstr. J. A. M. A. **83**: 1468 (Nov. 1) 1924.
2. Willan, R. J.: Traumatic Symphysiotomy, Surg. Gynec. Obst. **45**: 389-390 (Sept.) 1927.
3. Buckley, E. W.: Report of a Case of Separation of the Symphysis Pubis, Fracture of the Ramus of the Pubis and Rupture of the Bladder, M. J. Australia **1**: 422 (May 24) 1919.
4. Koven, M. T.: Traumatic Separation of the Sacro-Iliac Joint and Symphysis Pubis, Am. J. Surg. **2**: 266 (March) 1927.

about 4 inches distal to the great trochanters of the femur. This was lined with a liberal padding of cotton. The free ends of the canvas were suspended from the crossbar, the ropes running through a series of pullies, and traction was maintained by weights. To tighten the pelvic girdle, rope was laced from one side of the hammock to the other.

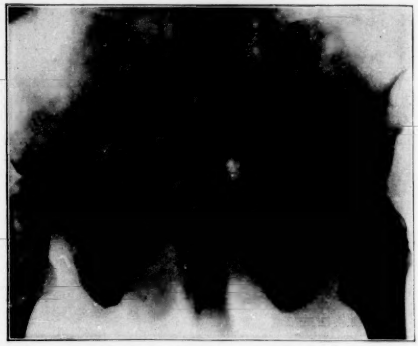


Fig. 1.—Separation of symphysis pubis when patient was examined after admission to the hospital.

This method successfully overcame the separation at the sacro-iliacs and at the symphysis. Because of the development of a phlebitis in the right leg, and a perineal abscess, which was drained by Dr. Squires of the Crowell Clinic, this method had to be abandoned. During this treatment the pelvis was kept in a tight binder, but the separation recurred. As soon as the drainage from the abscess cleared up sufficiently, the patient was strapped in an especially made low fitting belt. This belt was applied six weeks after the accident, and sufficient union at the sacro-iliacs had occurred to prevent closure at the symphysis.

He is, at the present time, walking about on crutches and refuses any attempt at improving his condition through operative intervention. There was, at the beginning, a separation at the symphysis of 9 cm. At present the separation is 6 cm. in width. Considerable improvement at the sacro-iliac joint is noticeable. Brehm[5] states that any separation over 0.9 cm. causes symptoms. Beach[6] reports that a woman was injured during labor with 7.5 cm. separation. After treatment there remained a separation of 3 cm., but the patient did not have any symptoms.

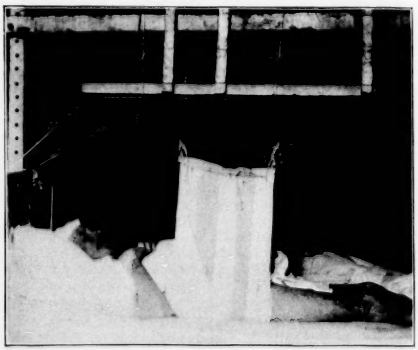


Fig. 2.—Hammock method of treating separation of symphysis pubis.

Many methods have been suggested for treating separation of the symphysis. Boorstein[7] reports six cases in which adhesive plaster and belts were employed with excellent results. Allen[8] inserted a Lane plate. This did not hold and it had to be removed later. Through two small skin incisions he then inserted two nails into the iliac spines, allowing them to protrude above the skin. Strong wire was bound around these nails. A cast was applied and after eight weeks the patient was able to walk. McNamara[9] closed the symphysis by passing number 4 silver wire through the obturator foramens. This gave good results.

This case is reported (1) because of the unusual type of accident causing the separation; (2) to record a separation of the pubis of such an extent in which there was no rupture of the bladder or fracture of the pelvis, and (3) to suggest this type of canvas hammock as a method of treatment in such cases.

Professional Building.

5. Brehm, Wayne; and Weirauk, H. V.: Separation of the Symphysis During Labor, Am. J. Obst. & Gynec. **15**: 187-191 (Feb.) 1928.

6. Beach, Ralph: Traumatic Separation of the Symphysis Pubis, Am. J. Obst. **175**: 203 (Feb.) 1917.

7. Boorstein, S. W.: Separation of the Symphysis Pubis, with a Report of Six Cases, Am. J. Obst. **13**: 345-351 (March) 1927.

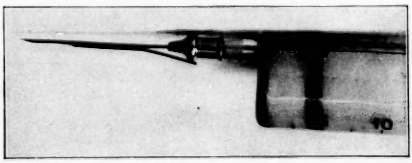
8. Allen, J. M.: Report of a Case of Separation of the Pubic Symphysis in a Forceps Delivery and the Treatment Employed, Am. J. Obst. **175**: 808 (May) 1917.

9. McNamara, S. J.: Wiring Through the Obturator Foramen for Symphysis Pubis Separation, Surg. Gynec. Obst. **23**: 625 (Nov.) 1916.

A NEW AMPULE NEEDLE*

GEORGE A. CLARK, M.D., SCRANTON, PA.

During the last ten years, the use of serum has increased tremendously in the treatment of many diseases. The different biologic houses place on the market ampules varying in size from 1 cc. to 20 cc. A large number of these ampules are rubber capped and the contents must be aspirated by a syringe and needle. It is undoubtedly an awkward procedure. One must fill the syringe with air and work the plunger back and forth in order to withdraw the required amount for the injection. This usually produces a foam in the barrel of the syringe which is annoying.



Ampule needle.

I have been in the habit of injecting a small hypodermic needle into the rubber cap at the same time that I wish to withdraw the fluid by the syringe and needle. This second hypodermic needle acts as an air vent. The necessary amount of fluid can then be withdrawn without effort and waste.

It occurred to me that a special ampule needle might be devised containing the air vent welded to the needle shaft. A number of these needles have been made up and their practicability has been tried out for several months. The needle tubing that is used as an air vent has been placed far enough back on the Luer needle so that it does not cause any inconvenience when the injection is given intravenously or subcutaneously. During the last few months, the pediatricians have been using large amounts of human and convalescent blood serum in the treatment of measles. The serum is put up by local laboratories in rubber-capped ampules of 10 cc. each. This needle affords a considerable saving of time in emptying the ampules, as well as facility in the administration of the serum.

Connell Building.

* These ampule needles were made up for me by the firm of William Alfred Lewis, 38-40 West Thirty-Third Street, New York.

TECHNIC OF CHOLECYSTOGASTROSTOMY *

J. TATE MASON, M.D., SEATTLE

The method of diverting the contents of the gallbladder into the gastro-intestinal tract described here has been used by us for several years. I feel that it is the simplest procedure possible when the necessity of creating a new passage for bile is evident. It is possible to obtain a certain amount of muscular control between the gallbladder and the stomach by separating the muscles of the stomach with a hemostat. For this reason, as well as on account of the inaccessibility of the duodenum, I have not done a cholecystoduodenostomy for years. It is remarkable what beneficial results are obtained and how long these patients continue relatively well.

OPERATIVE PROCEDURE

A small incision 1 cm. long is made on the anterior surface of the stomach wall near the pyloric end about 2 cm. from the greater curvature (fig. 1). The incision is extended into the cavity of the stomach and a curved clamp is inserted, directed upward and laterally to a point near the lesser curvature, level with the gallbladder. It is gently pushed through the mucosa and the muscular fibers of the stomach wall. If the gallbladder is so distended that it is dangerous to grasp it with a hemostat, aspiration with a small needle is first made.

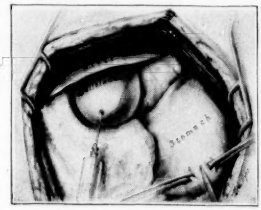


Fig. 1.—Position of incision.

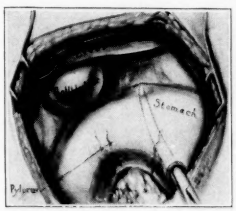


Fig. 2.—Hemostat enlarging the opening in stomach.

The blades of the hemostat are opened gently and turned until the opening in the stomach is large enough to admit the fundus of the gallbladder. This permits a sphincteric action of muscles around the anastomosis (fig. 2.).

The fundus of the gallbladder is grasped and pulled through the opening into the stomach. It is fixed with a single row of waxed silk sutures (fig. 3). A pair of scissors is passed through the lower opening and the fundus of the gallbladder opened (fig. 4). A small amount of fat from the gastrocolic omentum reinforces the anastomosis and the initial incision is closed (fig. 5).

1101 Terry Avenue.

* From the Mason Clinic.

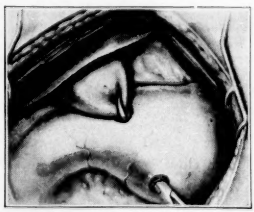


Fig. 3.—Fundus being pulled through the opening into stomach.

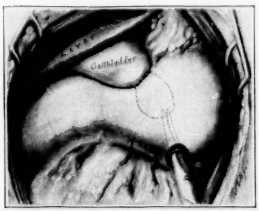


Fig. 4.—Fundus of gallbladder opened by scissors.

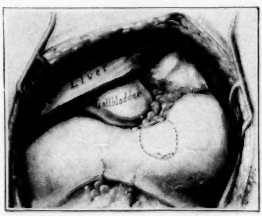


Fig. 5.—Closure of the initial incision.

Malta Fever.—American physicians gave little thought to Malta fever until Col. C. F. Craig of the U. S. Army in 1905 reported a case in a nurse who had been engaged in nursing soldiers in the Washington, D. C., hospitals. This was the first case reported in the United States.—Hines, E. A.: Some Observations on the First Reported Cases of Malta Fever in South Carolina, *J. S. Carolina M. A.*, December, 1929.

ANEURYSM OF THE ASCENDING PALATINE ARTERY: CHRONIC COUGH RELIEVED BY LIGATION

HAROLD BRUNN, M.D., AND A. LINCOLN BROWN, M.D., SAN FRANCISCO

A review of the available literature fails to provide the report of a single case of nontraumatic aneurysm of the external carotid artery or any of its branches. A few reports of traumatic aneurysms, particularly due to gunshot injuries, are noted, especially during the war period. We therefore believe the case reported here of sufficient interest to be recorded.

The patient was first seen by one of us (A. L. B.) late in December, 1928. The following history was obtained at that time:

History.—E. B. J., a white man, aged 64, an American, complained of cough and malaise. He had an incessant, nonproductive cough of five days' duration, which was worse at night and was aggravated by lying down, but also occasionally woke the patient when asleep while propped up in almost a sitting posture. The patient expectorated two masses of blood tinged sputum on the morning of examination. Otherwise the cough produced only a frothy sputum resembling saliva. There was also moderate pain, stabbing in character, in the lower left portion of the chest, which was aggravated by coughing or turning. The patient had been confined to bed for twenty-four hours before examination.

The family history was essentially negative. The patient had been married twenty-seven years. His wife was living and well except for essential hypertension. She had no children; there were no miscarriages.

The patient slept from six to eight hours in bed; he suffered from insomnia. He had taken a minimum of 5 grains (0.3 Gm.) of barbital daily for the past ten years, usually at night. He used alcohol occasionally and moderately, and tea, rarely. He drank two or three cups of coffee daily, and smoked from eight to ten cigars daily, and an occasional cigaret.

He was born and lived practically his entire life in San Francisco. His general health was always good. He did not remember having any serious illnesses. He never had pneumonia, diphtheria, whooping cough, influenza, pleurisy, tuberculosis or tonsillitis. There was no association with tuberculosis.

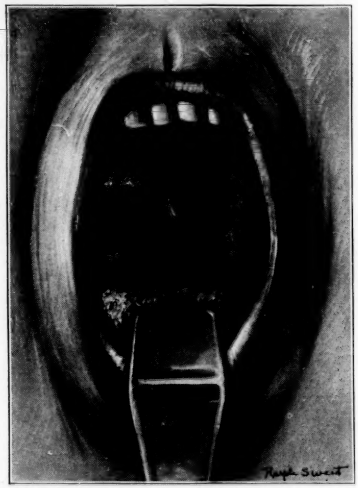
He had had frequent head colds and attacks of sore throat, eight or ten yearly, for the past fifteen years and had been treated by several throat specialists for laryngitis and bronchitis. These "colds" were associated with paroxysmal, nonproductive cough similar to that of the present illness, only partially relieved by steam inhalations and various codeine-containing cough mixtures. The tonsils had not been removed.

The patient had a right inguinal herniotomy in 1925 under local anesthesia without complications, and he had had several

carious teeth extracted during the past ten years. He had not had any accidents.

Physical Examination.—The patient was well developed and well nourished. He was in no acute distress, resting quietly in bed with the head elevated on three pillows, coughing paroxysmally and raising bits of frothy sputum.

The skull was normal in contour, and there was no tenderness. The scalp was clean and without scars. The hair was normal in amount, distribution and texture. The eyes showed beginning arcus senilis. Reaction to both light and distance was poor. The right pupil was slightly smaller than the left. There was no photophobia, diplopia, nystagmus or exophthalmos. There was no gross disturbance of vision. The fundi were negative except for moderate tortuosity of the retinal vessels. Examination of the ears did not reveal any mastoid tenderness. There was no gross disturbance of hearing. There was marked deviation of the nasal septum to the right with partial obstruction on that side. The teeth were in poor condition but were being cared for; the tongue protruded in the midline without



Aneurysmal dilatation on right posterior nasal pharyngeal wall before ligation of right external carotid artery.

tremor. There was no enlargement or exudate of the tonsils noted. The pharynx was inflamed and there was some posterior nasal discharge. The adenoids were not hypertrophied. The patient's voice was slightly hoarse, but this was usual for him. The vocal cords were thickened and inflamed, and the membranes were beefy red. The thyroid glands were not palpably enlarged. There were no bruits, thrills or abnormal pulsations, and there was no stiffness or tracheal tug present, but there were slight pea sized anterior cervical nodes.

The thorax was symmetrical with equal expansion on the two sides; it was normal in size and shape. Respirations were 20 and somewhat shallow. There were no abnormal pulsations.

The heart action was regular with clear sounds and without murmurs. The base measured 5.5 cm. The right broad diameter was 2.5 cm., and the left broad diameter, 9 cm. The apex impulse was seen and felt in the fifth interspace in the nipple line.

The radial pulses of the peripheral vessels were regular, equal and synchronous. Marked sclerosis of the brachial and radial vessels was present, and the temporal vessels were moderately tortuous and sclerosed. The blood pressure was 138 systolic and 90 diastolic.

Numerous harsh moist râles were scattered throughout both lungs. At the left base posteriorly a faint pleural friction rub was heard. On the abdomen was the scar of the herniotomy. The liver edge was smooth, and palpable 1 cm. below the costal margin. There were no masses, tenderness or spasm. Rectal examination showed the sphincter normal in tone. The prostate showed moderate uniform hypertrophy. The skeletal system was essentially normal. The legs did not reveal any varicosities or ulcers. Knee jerks were active and equal. The achilles jerks were normal, and there was a normal Babinski and Romberg response. Neuromuscular examination did not reveal any areas of anesthesia, paresthesia or hyperesthesia. The temperature was 99.2. The weight was 176 pounds (80 Kg.).

Laboratory Observations.—The blood Wassermann reaction with cholesterol antigen and with plain antigen was negative. The red blood cells numbered 4,762,000, with hemoglobin 85 per cent by the Tallqvist method. A stained specimen was essentially normal. The white blood cell count was 7,200 with 64 per cent neutrophils, 26 per cent small mononuclears, 8 per cent large mononuclears and 2 per cent eosinophils. The urine was clear, light amber and alkaline, with a specific gravity of 1.022; there was no sugar or albumin. A roentgenogram of the chest showed marked widening of the thoracic aorta with generalized cardiac enlargement.

Treatment and Course.—The immediate treatment was symptomatic, consisting of codeine cough mixtures, steam inhalations and medical diathermy to the chest. Within a week the chest signs and symptoms had cleared up but the irritative cough persisted. It now happened that the throat was examined while the patient was turned on his left side. There was then noted for the first time on the right posterolateral pharyngeal wall a distinct pulsating tumor, bean sized, which protruded into the pharyngeal cavity about three-eighths inch with each pulsation. The rate corresponded to that of the heart. With the patient in the erect position or turned to the right the tumor was barely visible, which fact probably accounts for its having previously passed unnoticed. The remainder of the physical examination was essentially as noted. There was no pulsation, mass or bruit in the neck, no headache and no external differences in vascular efficiency to be observed when the vessels on the right side of the head and neck were compared with those on the left. When the patient was questioned again, it was determined that about twenty years before he had received a thorough course of treatment for what was probably a syphilitic infection.

He was now advised that if the cough persisted it might be advisable to ligate the right external carotid artery in the hope that this aneurysmal dilatation was the inciting cause of the chronic cough. The next three weeks was spent in a warm, dry climate but the cough persisted. Reexamination showed that the tumor had enlarged to about four times its original size but that it was still visible only through the buccal cavity. The rapid growth of the tumor gave rise to fears of possible rupture. Therefore, and with the hope that the cough might be allayed, it was decided to perform a ligation of the external carotid artery, which operation was done by one of us (H. B.), Feb. 18, 1929.

Operation and Result.—Under cervical nerve block anesthesia obtained with about 60 cc. of 1 per cent procaine hydrochloride solution, an incision 5 cm. in length was made parallel to the anterior border of the right sternocleidomastoid muscle beginning at the level of the angle of the jaw. The fascia was separated by sharp dissection, the posterior belly of the digastric muscle was divided and the great vessels of the neck were exposed. The external carotid was freed for a distance of 4 cm. No aneurysmal dilatation was made out. However, compression of this vessel caused a cessation of the pulsation observed in the pharynx and the subsidence of the tumor. The external carotid was now doubly ligated with linen, 1 cm. above the bifurcation. The right facial, lingual and superior thyroid arteries were now ligated to prevent the engorgement of the tumor by means of this profuse collateral circulation. The complete collapse of the tumor as seen through the mouth was definitely determined before closing. The fascia was approximated with plain catgut sutures, with Michel clips to the skin. The patient returned to bed in excellent condition.

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The postoperative course was uneventful and, one week after the operation, the patient went home. At that time the tumor in the pharynx was still collapsed, the right temporal artery was pulseless, and there were no visible or symptomatic circulatory disturbances in any portion of the territory supplied by the external carotid. One month later the general health was good. There was no pulsation or mass to be seen on the inside of the throat. The wound and subcutaneous thickening were gradually reducing in size and were not tender. Pulsation was not noted internally. The coloration of the face was bilaterally uniform. No pulsation could be made out in the right superior temporal artery. The patient had not had any attacks of coughing since the operation.

This status persists to date, more than nine months after operation.

COMMENT

There is little doubt that we were dealing here with an aneurysmal dilatation of one of the branches of the right external carotid artery. Before operation it was thought that possibly the ascending pharyngeal artery was involved; but the operative results ruled this out, so that the lesion must be considered to have been of a terminal branch of the external maxillary artery, i. e., the ascending palatine artery.

The etiology is likewise somewhat obscure. First of all there is the suggestive syphilitic history. Secondly, a generalized vascular sclerosis was noted. The third factor is cough. Did the chronic cough aid in the production of the tumor or was the tumor the irritating factor producing the cough? A vicious circle may well have been established.

In spite of these uncertainties this case is presented because of the apparent rarity of aneurysms of the external carotid artery or its branches, and because ligation of such an aneurysm relieved an otherwise intractable cough.

384 Post Street—490 Post Street.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

DIPHTHERIA TOXOID (See New and Nonofficial Remedies, 1929, p. 368).

The National Drug Co., Philadelphia.

Diphtheria Toxoid.—Prepared from seven day cultures of the diphtheria bacillus that yield a toxin having an L+ dose of not less than 0.25 cc.; the antitoxin used in the preparation is obtained from goats. The toxin is treated with formaldehyde until its toxicity is so reduced that five maximum human doses will cause no local or general symptoms of diphtheria poisoning when injected subcutaneously into guinea-pigs. The product is tested for antigenic potency by injection subcutaneously of 0.5 cc. into each of at least ten guinea-pigs weighing between 270 and 320 Gm.; at the end of thirty days the animals are injected subcutaneously with five minimum lethal doses of a stable diphtheria toxin; 80 per cent of the animals must survive. It is marketed in packages of three vials (one immunization treatment), each containing 0.5 cc. of the toxoid; in packages of one vial (fifteen immunization treatments), containing 22.5 cc. of the toxoid; in packages of forty-five vials (fifteen immunization treatments), each containing 0.5 cc. of the toxoid. The immunization treatment consists of three doses of 0.5 cc. each of the toxoid, given at intervals of three weeks.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN (See New and Nonofficial Remedies, 1929, p. 350).

Cutter Laboratory, Berkeley, Calif.

Scarlet Fever Streptococcus Antitoxin-Cutter.—It is prepared by the method of Drs. Dick under U. S. patent 1,547,396 (July 28, 1925; expires 1942) by license of the Scarlet Fever Committee, Inc. The serum is concentrated by a modification of the Banzhaf method. Marketed in packages of one syringe containing 2,000 units (prophylactic dose), and in packages of one syringe containing 6,000 units (therapeutic dose).

TYPHOID VACCINE (See New and Nonofficial Remedies, 1929, p. 378).

H. K. Mulford Company, Philadelphia.

Typho-Bacterin Mixed (Triple Vaccine TAB) (see New and Nonofficial Remedies, 1929, p. 380).—Also marketed in packages of thirty 1 cc. vials (M 195-5), being ten immunizations of three doses each, the first dose containing 500 million killed typhoid bacilli and 250 million each of killed paratyphoid A and paratyphoid B bacilli, and the second and third doses each containing 1,000 million killed typhoid bacilli and 500 million each of killed paratyphoid A and paratyphoid B bacilli.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED THE PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

AMPOULE NO. 61 SODIUM SALICYLATE 15½ GRAINS, AMPOULE NO. 59 SODIUM IODIDE 15½ GRAINS, AMPOULE NO. 66X SODIUM SALICYLATE, SODIUM IODIDE 15½ GRAINS EACH, AMPOULE NO. 66 SODIUM SALICYLATE, SODIUM IODIDE AND COLCHICINE, AND AMPOULE NO. 50 IRON AND ARSENIC (IRON CACODYLATE) 1 GRAIN NOT ACCEPTABLE FOR N. N. R.

Among the "Ampoule Preparations" for Intravenous Use marketed by the Lakeside Laboratories, Inc., Milwaukee, are the following: Ampoule No. 61 Sodium Salicylate 15½ grains, Ampoule No. 59 Sodium Iodide 15½ grains, Ampoule No. 66X Sodium Salicylate, Sodium Iodide 15½ grains each, Ampoule No. 66 Sodium Salicylate, Sodium Iodide and Colchicine, and Ampoule No. 50 Iron and Arsenic (Iron cacodylate) 1 grain.

The Council, in reporting on "Some of Loeser's Intravenous Solutions" (THE JOURNAL, April 16, 1921, p. 1120), stated:

"The Council continues to hold that intravenous medication, generally, is not as safe as oral medication even with relatively harmless substances (a fact again illustrated by the results of Hanzlik and Karsner 1920, *Journal Pharmacology and Experimental Therapeutics*, **14**, 379), and that it does not give 'improved clinical results' except under rather narrowly confined circumstances—namely, if the drug undergoes decomposition in the alimentary tract, if it is not absorbed, if it causes serious direct local reaction or if time is an urgent element. Each intravenous preparation for which advantage over oral administration is claimed, directly or by implication, must be examined from these points of view.

"The Council has recognized intravenous preparations which satisfied these requirements. It is evident, however, that hexamethylenamin, sodium iodid and sodium salicylate do not. When given orally they do not undergo material decomposition in the digestive tract, they are rapidly absorbed, they cause no direct local reaction, and in the conditions in which they are used the hour or so which is required for absorption is immaterial, especially as they are used continuously for some time. . . . Especially objectionable are the fixed proportion mixtures of sodium iodid with sodium salicylate and with hexamethylenamin. The dosage of all three drugs has to be adapted to individual conditions. This is impossible when giving them in fixed proportions." Since publication of this report, no evidence in favor of the routine intravenous administration of sodium salicylate or of sodium iodide has been brought forward.[1]

The objections of the Council to the intravenous administration of drug mixtures in fixed proportions applies of course to those mixtures of this firm which are listed in this report. Ampoules No. 50 Iron and Arsenic (Iron Cacodylate) is unacceptable because the indefinite term "iron and arsenic" rather than the descriptive name "iron cacodylate" is used as the name; because recommendations for the routine intravenous use of iron are not warranted, and because ferric cacodylate presents an irrational and useless method of the administration of iron and arsenic (Reports Council on Pharmacy and Chemistry, 1920, p. 62).

The Council declared Ampoule No. 61 Sodium Salicylate 15½ grains, Ampoule No. 59 Sodium Iodide 15½ grains, Ampoule No. 66X Sodium Salicylate, Sodium Iodide 15½ grains each, Ampoule No. 66 Sodium Salicylate, Sodium Iodide and Colchicine, and Ampoule No. 50 Iron and Arsenic (Iron cacodylate) 1 grain unacceptable for New and Nonofficial Remedies because recommendations for the routine intravenous administration of sodium salicylate and sodium iodide are not warranted and because the administration of sodium salicylate and sodium iodide, of sodium salicylate, sodium iodide and colchicine in fixed proportion and of iron and arsenic in the form of ferric cacodylate whether intravenously or otherwise is irrational.

1. On the contrary, experienced physicians have reported that they consider it not practically feasible in many cases to give a sufficient number of intravenous injections of sodium iodide to meet the needs of some patients.

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SATURDAY, JANUARY 4, 1930

THE PREMATURE INFANT

The premature infant is subject to malformation and to intra-uterine infection, such as syphilis, just as is the full-term infant. These conditions may be a cause, but not the result, of prematurity. They may be the cause of abnormality or death, but the reaction of the premature infant to them differs in no way from that of the full-term child. Its incomplete development at the time of birth causes the premature infant to react differently from the normal infant to its external environment. Because of incomplete development of the nervous system, the temperature regulating mechanism does not have the automaticity of action that characterizes this mechanism at a later period. The premature infant is therefore extremely sensitive to external thermal conditions and reacts to a temperature lower than that of the normal body in a manner deleterious to itself. It is, to a certain degree at least, a poikilothermic rather than a homothermic organism. Incomplete preparation for independent existence starts the premature infant in life with metabolic requirements that are difficult to meet and that make its alimentation no easy task. Incomplete development of the reflexes probably renders the premature infant more than usually susceptible to respiratory infection, deficient expansion of the lungs probably being an added factor in such infection. Detrimental reactions to external temperature, special nutritional requirements, and susceptibility to infection, all of which are the result of the state of prematurity, render precarious the premature infant's slender hold on life. These physiologic or functional abnormalities, which are peculiar to the premature infant because of its prematurity, can be overcome in large measure by means directed toward this end, such as the maintenance of constant and proper temperature and humidity of the atmosphere, careful nursing, and breast-milk feeding. Hess and Chamberlain [1] have described the application of such measures in the hospital properly equipped for the care of premature infants, and have analyzed the maternal, fetal and postnatal factors that affect the viability of such infants. In 266 admissions to the premature infant station of the Sarah Morris Hospital for Children, the mortality was 40.8 per cent, indicating the importance of factors other than those that can be combated by proper care.

Glaser,[2] who studied a series of 100 infants from the same source as that of Hess and Chamberlain, directed his attention to changes in the cerebrospinal fluid. The high mortality of 81 per cent in this series was due to the inclusion of as many cases as possible of intracranial hemorrhage. Necropsy was done in seventy (79 per cent) of the eighty-one infants that died, and it is on these seventy premature infants, from whom cerebrospinal fluid was obtained during life or immediately after death, that Glaser's study was based. Twenty-six, or 36 per cent, revealed macroscopically evident subarachnoid or subpial hemorrhage. The cerebrospinal fluid was grossly bloody in 73 per cent of these. The blood-free fluid of the seven infants with hemorrhage was distinctly yellow. In 31 per cent of the forty-two infants without macroscopic evidence of intracranial hemorrhage, the fluid was grossly bloody. Sixty-two per cent of the fluids that on gross examination were free from blood were found on microscopic examination to contain erythrocytes. Of the total seventy cases, only eighteen, or 26 per cent, failed to show blood in the spinal fluid; most of these negative fluids were yellow. The absence of blood in the cerebrospinal fluid of 27 per cent of twenty-six infants in whom necropsy revealed gross hemorrhage indicates that subpial hemorrhage may be present and may fail to manifest itself by free blood in the fluid because the blood is confined beneath the pial membrane. The presence of erythrocytes in the fluid of 73 per cent of forty-two infants in whom necropsy failed to disclose gross hemorrhage is evidence that the finer vessels of the pia-arachnoid may be injured without the production of grossly recognizable hemorrhage. Xanthochromia, a yellow coloration of the cerebrospinal fluid, received particular attention in the study of Glaser. Only five of fifty-two water-clear cerebrospinal fluids of premature infants were absolutely colorless. These colorless fluids came from infants aged 60 days or over. The color was deepest from 2 to 14 days of age. All of the yellow fluids gave a negative benzidine reaction for hemoglobin. Half of forty-six yellow, water-clear, benzidine-negative fluids gave a positive indirect van den Bergh reaction. From these results it is apparent that half of the fluids contained a pigment that is not hemoglobin, since the benzidine reaction was negative, nor is it bilirubin, since the van den Bergh reaction was negative. It is probably an intermediate hemoglobin derivative. From the frequency with which blood and its derivatives occur in the cerebrospinal fluids of pre-

1. Hess, J. H., and Chamberlain, I. M.: Premature Infants: A Report of Two Hundred and Sixty-Six Consecutive Cases, Am. J. Dis. Child. **34**: 571 (Oct.) 1927.

2. Glaser, Jerome: The Cerebrospinal Fluid of Premature Infants, with Special Reference to Intracranial Hemorrhage and Pigmentation, Am. J. Dis. Child. **36**: 195 (Aug.) 1928.

mature infants, Glaser concludes that some degree of intracranial hemorrhage is, so to speak, physiologic. But the fact that subpial hemorrhage was of such an extent as to cause the death of 37 per cent of premature infants examined post mortem establishes the importance of this pathologic process as a menace to the life of the prematurely born.

Clein,[3] who also worked with the material of the premature infant station of the Sarah Morris Hospital, correlated the antemortem clinical symptoms with the postmortem pathologic observations. Of his series of 102 patients admitted consecutively, forty-eight died, a mortality of 47 per cent, which is a little higher than the death rate of the larger series reported by Hess and Chamberlain. The most striking and frequent symptom in the infants who died was cyanosis, of which four types are recognized by Clein: cyanosis that is continuous from the time of its appearance, usually at birth; intermittent cyanosis, the attacks occurring usually during the first to third days of life, and again from the seventh to eighteenth day if the infant lives that long; terminal cyanosis; and sporadic attacks for which a definite cause, such as vomiting, coughing, or choking during feeding, can usually be found. Eighteen, or 50 per cent, of the infants examined post mortem had intracranial hemorrhage situated beneath the tentorium, usually over the superior surface of the cerebellum and in the cerebellopontile angle. In all of these, intermittent cyanosis had been the striking symptom. This symptom was noted in only one infant who did not have infratentorial hemorrhage, and it was not seen in the infants who lived. In nine of eighteen infants with infratentorial hemorrhage there was also supratentorial hemorrhage, usually localized over the parietal lobes. In three infants with intracranial hemorrhage, the latter was entirely supratentorial; none of these infants had exhibited intermittent cyanosis during life. Continuous cyanosis, when not due to a congenital heart lesion, which was the chief cause of death in only one infant, was due to pulmonary atelectasis, which was held to be the major pathologic lesion in 7 per cent of the cases. Otitis media, with or without mastoiditis, was considered the chief lesion in 17 per cent. The relation of this process to diarrhea, vomiting and fever is emphasized by Clein, as it has been by others in young full-term infants. It is probably a terminal infection, resulting from a poor nutritional state and low resistance. When a second series of attacks of cyanosis occurred from the seventh to the eighteenth day in an infant that had had intermittent cyanosis during the first three days of life, infratentorial hemorrhage was found associated with infection.

From the work of Hess and Chamberlain, of Glaser and of Clein, it is apparent that the most important factors which endanger the premature infant's hold on life are the pathologic functioning that is the result of the incomplete development of the infant, intracranial hemorrhage, and pulmonary atelectasis. The frequency and importance of these factors vary inversely with the intra-uterine age of the infant at the time of birth; the more premature the infant, the more frequently do these factors operate as causes of death. They are the expressions of prematurity and are its principal pathologic manifestations. After them come non-syphilitic infections, to which the premature infant is probably somewhat more liable than is the normal, full-term infant, and congenital syphilis, which may be a cause of prematurity and therefore relatively more frequent than in full-term infants. After all of these come the malformations and maldevelopments.

3. Clein, N. W.: Premature Infants: A Clinical and Pathologic Study, Am. J. Dis. Child. **37**: 751 (April) 1929.

INDUSTRIAL MEDICINE

Bernardino Ramazzini, in the years near 1690, laid the foundations of industrial medicine and has become its patron saint. In his "Diseases of Artificers and Tradesmen," published in 1700, he considered in forty-three chapters the occupational ills of metal workers, alchemists, glassmakers, potters, painters, dyers, tanners, bakers, millers, masons, surgeons, barbers, wrestlers and learned men. As Legge[1] tersely states, Ramazzini omits little save the hazards of steamship building and the manufacture of high explosive shells. Confronted with the ravages of small numbers of simple intoxicants, he wrote of mercury, for example:

'Tis well known what dismal Plagues are inflicted by Quicksilver upon Goldsmiths, and chiefly those who are employed in Gilding Silver or Brass Work; For as this Gilding can't be performed without Amalgamation (i. e., the Corrosion of the Mettal by Mercury), so when they afterwards come to dislodge this Mercury by Fire, tho they turn away their Faces, they can't possibly avoid the receiving some poysonous Steams at the Mouth, and accordingly we find that this sort of Workmen do quickly become Asthmatick, Paralytick and liable to Vertigo's; and their complexion assumes a dangerous Ghostly Aspect.

Today the complex chemical intoxicants are so numerous that they may not even be enumerated. Indeed, new chemicals and new hazards appear constantly. The far removed day of Ramazzini may be emphasized no better than in his own words:

If we consider what a vast difference there is between the Europeans and the Americans, and other barbarous nations of the New World, we can't but be sensible that mechanik arts have contributed very much towards the civilising of mankind.

Industrial medicine of the present day is concerned with the fact that the available energies of the workman should be so conserved, so renewed, so applied and so protected that work may be performed with continuity and reasonable regularity, over a long work life expectancy, with advantage alike for himself and his employer. The foremost objectives of industrial medicine are: (1) to fit every person to types and quantities of work according to his ability to perform such work

1. Legge, T. M.: Industrial Diseases Under the Mediæval Trade Guilds, J. Indust. Hyg. **1**: 475 (Feb.) 1920.

continually without undue impairment, without injury to himself or his fellow workmen, and with profit to himself and his employer; (2) to procure and maintain fitness for work through efforts applied to the worker as an individual, to groups of workers, and to the work environment; (3) to educate the worker to a comprehension of the value and significance of physical and mental well being and, in particular, of personal hygiene and accident prevention; and (4) to reduce all loss of time, absenteeism and short work spans in industry the cause of which may be related in any way to health.

With these boundaries, much so-called industrial medicine is revealed as quite beyond the legitimate field. Medical care of entire communities in mining areas or kindred enterprises, through contract arrangements, with the family as the unit, may lead to organized or socialized medical care but it is not within the scope of industrial medicine. The physician who practices in an industrial community and cares for cases originating in industries may render appropriate care for these industrial cases and yet meet most meagerly the requirements of industrial medicine at its best. The physician lending his standing to the confounding of compensation cases in order that a casualty company's experience may be continually profitable may deal with industrial cases, but he too is far afield from industrial medicine. The layman, feverish in his desire to turn the bad by-products of human impairment in industry into profit, may organize, incorporate and employ physicians. He administers industrial medicine only when through skilled industrial physicians he meets the objectives earlier set forth. Seldom, if at all, do these activities on the fringes of acceptable industrial medicine conform to the most desirable provisions within that specialty of medicine.

The early craft guilds were the only friendly benefit and sick associations of their times. The guilds cherished (1) honest, thoroughgoing workmanship, and (2) the protection of their sick. Thus, early industrial medicine was purely "fraternal." Changing work systems now lead to the charge that industrial medicine is purely "paternal." Industrial medicine should be neither. It must deal with the worker as a producing unit and not as a social unit. It centers about the factory and not the home. Its activities partake of the practice of both public health and curative medicine, and it deals with workers as individuals and in groups. Intelligent, constructive selfishness is the industrial point of view for this form of medicine; but before such measures may be profitable to industry they must be applied to and profit the worker. Conceived in selfishness, industrial medicine culminates in humanitarianism.

The ramifications of our industrial civilization have made the study and organization of industrial medicine a necessity. The need is great for organized medicine (1) to mark the just and proper domain of acceptable industrial medicine, (2) to stimulate a demand for the truly qualified industrial physician and (3) to limit industrial medicine wholly to the boundaries set forth. If industrial medicine becomes merely a pathway to general care of all the sick by poorly educated, low salaried medical "hacks" it will defeat the very need by which it came into being.

Current Comment

SPECIFICNESS OF IMMUNE REACTIONS

If the chemical nature of specific groups or of unique details in structure which confer on proteins their ability to act as specific antigens could be determined, it would mark an advance of fundamental importance in the science of immunology. Although our knowledge of the protein molecule is at present wholly inadequate for this purpose, important information may be obtained by observing changes in specificity resulting from the formation of protein derivatives of definite structure. The earlier attempts in this field resulted for the most part in the production of ill defined derivatives of unknown structure. Recently Landsteiner and van der Scheer [1] prepared compounds of horse and chicken serum with the optical isomers of tartaric acid and found that these derivatives, when injected into rabbits, produced antiserums which differentiated specifically between the dextrotartaric and the levotartaric acid combined with the protein. Similar results were obtained by Avery and Goebel,[2] working with compounds of serum globulin and egg albumin with identical derivatives of dextrose and of galactose. In both series of experiments, antibodies were produced which reacted specifically with the simple radicals used, regardless of the type or species of protein with which they were combined. In both cases, also, specific antiserums were obtained which differentiated between stereo isomers differing from one another only in the arrangement of the various groups in the molecule, in space. The results obtained are far-reaching in importance. In the first place, they emphasize again the fact, previously established especially by Landsteiner, that the specificity of a large colloidal molecule or complex may be determined entirely by a comparatively small reactive group in that molecule. In this connection, recent work on enzymes indicates that here, too, the specificity of the colloidal complex may be determined by a small reactive group. The nature of the simple compounds used in both series of experiments indicates that the spatial arrangements of the groups in the reactive part of the molecule may determine the specificity of the entire complex, many hundred times its own size. This is especially striking in the experiments of Avery and Goebel, in which the compounds of dextrose and of galactose utilized differed from one another only

1. Landsteiner, K., and van der Scheer, J.: Serologic Differentiation of Steric Isomers (Antigens Containing Tartaric Acids), Second Paper, J. Exper. Med. **50**: 407 (Oct.) 1929.

2. Avery, O. T., and Goebel, W. F.: Chemo-Immunological Studies on Conjugated Carbohydrate-Proteins, J. Exper. Med. **50**: 533 (Oct.) 1929.

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in the relative positions in space of the H and OH groups on a single carbon atom. The conclusion seems inevitable that the specificity of immune reactions may be due not only to a comparatively small reactive part of the colloidal antigen but also to a definite arrangement in space of the groups comprising this reactive part of the complex injected. Notions of the chemical nature of antigens must also be revised to include compounds of this sort which are chemically identical but immunologically specific as the result of different orientations in space of groups in the reactive part of the colloidal molecule.

EXCRETION OF BARBITAL

In his presidential address on the dangers of insomnia, delivered before the section of psychiatry of the Royal Society of Medicine last year, Sir Maurice Craig [1] favored the prolonged use, when necessary, of drugs of the barbital group, or barbitone group as it is called in Great Britain. He believes that, when given in small doses, these act by protecting a weakened inhibition, and in his experience they may be taken for years without producing deleterious effects. This view receives some confirmation from recent experimental work in the University of Alberta.[2] Hypnotic doses of barbital (up to 25 per cent of a fatal dose) were administered to four cats over a period of ten weeks. At the end of this time the barbital produced just as much depression as when it was administered for the first time. A cumulative effect appeared only during the first few days of administration. Subsequent observations showed that this was due to a lag in excretion. In the second week the excretion increased and thereafter no cumulative effect was observed. Some psychiatrists insist that sedative drugs have no place in psychiatry. Directors of psychopathic institutions complain that many patients are admitted in a state of toxic delirium for which they have to be treated before the underlying psychosis can receive attention. Such cases, it must be admitted, are often due to self-medication. Sir Maurice Craig argues that, if physicians would be more generous in prescribing suitably for such patients, self-medication would be less often attempted. Tillotson [3] believes, however, that in certain conditions—manic-depressive insanity, constitutional psychopathic inferiority and psychoneuroses—there is a predisposition to habit formation and that to such patients these drugs should never be administered. Here is a reasonable difference of opinion which can be settled only by further observation. In the meantime it is clear that careful attention should be given to the class of patient for whom barbital is prescribed and that in writing prescriptions the use of trade names should, as far as possible, be avoided.

1. Craig, Maurice: A Survey of Some Conditions Conducive to Mental Disturbance, with Suggestions as to Their Treatment, Proc. Roy. Soc. Med. **22**: 197 (Dec.) 1928.

2. Eddy, N. B.: The Effect of the Repeated Administration of Diethyl Barbituric Acid and of Cyclohexenylethyl Barbituric Acid, J. Pharmacol. & Exper. Therap. **37**: 261 (Nov.) 1929; The Excretion of Di-Ethyl Barbituric Acid During Its Continued Administration, ibid. **37**: 273 (Nov.) 1929.

3. Tillotson, K. J.: The Abuse of Drugs in Certain Psychopathic States, with Reports of a Few Cases, New England J. Med. **200**: 990 (May 9) 1929.

ABSCESS FROM SWALLOWED BONE

Injury to the intestinal wall from swallowed fishbones may not be as rare as has been supposed. Although reference to such injuries is seldom found in the literature, three cases treated within a period of nineteen months have recently been reported.[1] In two cases the fishbone was recovered from within an intra-abdominal abscess and in the third case, although the swallowed fishbone had been removed from the rectum by the patient, perforation had already occurred, necessitating an operation for the resulting abscess. Perforation is more common in the large than in the small intestine, perhaps because of its fixed position, thinner, sacculated wall, and vigorous peristaltic movements. Dr. Bearse remarks that acute symptoms are usually lacking since perforation takes place slowly. The history is usually one of gradually increasing pain and tenderness, with the development of a mass. There is no complaint of obstruction, but when the rectum has been perforated, defecation may be painful. The patient may or may not recollect having swallowed a fishbone. In the latter case it may be impossible to make a sure diagnosis, for little if any shadow of a fishbone is thrown by the roentgen ray.

FACTORS AFFECTING THE SERUM CALCIUM

Investigations of such physiologic phenomena as the acid-base balance of the body and the neutrality regulation of the blood indicate the complexity of the reactions involved. The fluids of the organism normally represent a sort of equilibrium in which numerous determining factors are involved. A shift in the concentration of any one of them may occasion compensatory readjustments involving several other factors. The "steady states" of the body represent the results of an interplay of functions whereby "homeostasis," [2] as Cannon designates the condition, is brought about. An interesting instance of this has just been reported by Peters and Eiserson [3] of the Yale University School of Medicine. They found that the concentration of calcium in the serum varies directly with the concentration of protein and inversely with the concentration of inorganic phosphorus. It is therefore impossible to interpret serum calcium variations accurately unless protein and inorganic phosphorus are simultaneously determined. A low calcium value need not represent any primary disturbance in calcium metabolism unless the values for the other components referred to are taken into consideration. A serum calcium content low in proportion to the protein and phosphorus is, however, significant. Thus the Yale clinicians have observed in certain kidney disorders that, when calcium is found extremely low without important protein or phosphorus abnormalities, the calcium reductions are due to disturbances of calcium metabolism and the mechanism of calcification, and not to the renal disease

1. Bearse, Carl: Fishbones as a Cause of Intestinal Perforation, New England J. Med. **201**: 885 (Oct. 31) 1929.

2. Physiologic Homeostasis, editorial, J. A. M. A. **93**: 1385 (Nov. 2) 1929.

3. Peters, J. P., and Eiserson, Leo: The Influence of Protein and Inorganic Phosphorus on Serum Calcium, J. Biol. Chem. **84**: 155 (Oct.) 1929.

itself. Such hypocalcemias are usually encountered in children, who are more prone to such disorders of calcification than adults. The interpretation of analytic data regarding the make-up of the blood is thus becoming more difficult and exacting.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE AND HOSPITALS

Palmer House, Chicago, February 17-21

Second Supplement to the Program Published Dec. 14, 1929

MONDAY BANQUET

The banquet to be held on Monday evening, February 17, at 6:30, will be for the entire congress and will be given under the auspices of the Council on Medical Education and Hospitals and the Central Council for Nursing Education as joint hosts. The speaker will be Dr. Robert Maynard Hutchins, president of the University of Chicago. Hon. Ray Lyman Wilbur, Secretary of the Interior and chairman of the Council on Medical Education and Hospitals, is expected to preside. It will be a formal banquet and ladies in attendance at the conference are most cordially invited.

JOINT MEETING OF THE STATE HOSPITAL ASSOCIATIONS OF ILLINOIS, INDIANA AND WISCONSIN

The joint meeting of the State Hospital Associations of Illinois, Indiana and Wisconsin will be held at the Palmer House, February 20 and 21, two days immediately following the Congress on Medical Education, Licensure and Hospitals. The tentative program is as follows:

THURSDAY FORENOON, FEBRUARY 20

DONALD M. MORRILL, M.D., Presiding
Medical Director, Blodgett Memorial Hospital, and President, Michigan Hospital Association, Grand Rapids

Four Major Problems in Hospital Administration
Bert W. Caldwell, M.D., Executive Secretary, American Hospital Association, Chicago.

The Absorption of Special Charges
L. C. Austin, Superintendent, Mount Sinai Hospital, Milwaukee, and Secretary, Wisconsin State Hospital Association.

Endowments for Schools of Nursing
Speaker will be announced later.

The Proper Ratio of Personnel to Patients
Speaker will be announced later.

THURSDAY AFTERNOON

J. W. MEYER, Presiding
Manager, Aurora Hospital, and President, Hospital Association of the State of Illinois, Aurora

The Superintendent's First Steps in Planning a New Hospital
Speaker will be announced later.

The Coordination of Departments
Speaker will be announced later.

The Cost of Illness
Speaker will be announced later.

How the Social Worker Should Cooperate with the Other Department Heads
Edith Eichkoff, A.B., Assistant Professor of Social Service, Indiana University, Indianapolis.

FRIDAY FORENOON, FEBRUARY 21

ALBERT G. HAHN, Presiding
Business Manager, Protestant Deaconess Hospital, and President, Indiana Hospital Association, Evansville

Staff and Departmental Meetings
Speaker will be announced later.

What a Hospital Trustee Should Know
Speaker will be announced later.

Trustees' Meetings
Speaker will be announced later.

The Relation of the Superintendent to the Board of Trustees
Speaker will be announced later.

FRIDAY AFTERNOON, FEBRUARY 21

JOHN W. COON, M.D., Presiding
Medical Director, River Pines Sanatorium, and President, Wisconsin Hospital Association, Stevens Point

Public Relations
Speaker will be announced later.

Emergency Work in the General Hospital
Speaker will be announced later.

The Hospital Dietitian
Speaker will be announced later.

Business meetings of the individual hospital associations are planned for Wednesday, February 19.

THURSDAY EVENING BANQUET

A banquet will be held, Thursday evening, at 6:30, under the auspices of the joint hospital associations of Illinois, Indiana and Wisconsin. Dr. Christopher G. Parnall, medical director of the Rochester General Hospital and president of the American Hospital Association, will preside.

REDUCED RAILWAY FARES

All those attending the joint meeting of the state hospital associations are eligible to receive such reduced railway fares as may be secured for the Congress on Medical Education, Licensure and Hospitals. On buying their tickets to Chicago all should *obtain certificate receipts*, which, when countersigned, will entitle them to one-half fare for their return tickets.

MEDICAL BROADCAST FOR THE WEEK

The American Medical Association Morning Health Talks and Evening Health Hints from Hygeia

The American Medical Association broadcasts daily at 10 o'clock, Central Standard Time, with the exception of Friday, when the health message is delivered at 9:45, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of January 6-11 is as follows:

January 6. "The Safeguarding of School Equipment in Manual Training," by Dr. John M. Dodson.
January 7. "The Ubiquitous Wash Cloth," by Dr. R. G. Leland.
January 8. "X-Rays—A Two-Edged Sword," by Mr. H. J. Holmquest.
January 9. "Overtired Children," by Miss Mildred Whitcomb.
January 10. "Warning Signals of Fatigue," by Mr. Cecil Bean.
January 11. "Medicolegal Anecdotes," by Mr. T. V. McDavitt.

Evening Health Hints from Hygeia, 8 o'Clock, Central Standard Time

January 6. The Conflict with Quackery.
January 7. Off Duty.
January 8. Professional Patchwork.
January 9. Looking Backward.
January 10. Early Diagnosis and Happiness.
January 11. Knowing Tuberculosis.

THE DETROIT SESSION

Scientific Exhibit: Announcement of Exhibit by Section on Radiology

The Section on Radiology has appointed the following members as the Committee on Section Exhibit: Ross Golden, M.D., New York; E. R. Witwer, M.D., Detroit, and P. M. Hickey, M.D., Ann Arbor, chairman.

The committee again points out that one of the functions of the Section on Radiology is to cooperate in educational matters. One of the ways in which this educational program can be fostered is by the members of the Section on Radiology arranging a well selected exhibit for the Detroit Session. The committee, therefore, invites applications for exhibits of investigative character dealing with the subject of radiology.

The radiologic exhibit may be in the form of original films or reduced transparencies. Prints, provided they are suitably mounted on cardboard, are also quite desirable. In case either of transparencies or of prints, particular emphasis should be placed on the use of amply printed explanatory legends; a third dimensional exhibit correlating the films is particularly impressive. As in the case of all exhibits in the American Medical Association, personal demonstration is required.

The members of the specialty are asked to take an inventory of the materials that might illustrate phases of radiology, and

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communicate with the committee chairman, Dr. P. M. Hickey, University Hospital, Ann Arbor, Mich. All applications must be made on the regular application form, which is the one required by the A. M. A. Committee on Scientific Exhibit. A circular letter giving information concerning this exhibit, together with the usual application blank, has been sent to all those who have registered in the section during the last three years. Those who have not registered in this section but who are interested in such an exhibit may obtain a circular letter and application blank by sending the request to Dr. Hickey. Applications should be filed not later than March 1 with Dr. Hickey.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

COLORADO

Personal.—Dr. Carl H. Graf has been appointed health officer of Boulder.——Dr. Basil G. Carson, secretary of the Arapahoe County Medical Society, has been appointed health officer of Englewood to succeed the late Dr. Arthur O. Tiedt.

Communicable Diseases in General Hospitals.—In the last three years, the Colorado General Hospital, Denver, has treated in its wards practically all local types of communicable diseases without a single cross-infection, says the committee on hospitals of the Colorado State Medical Society in its annual report. The committee believes that it has been definitely demonstrated that communicable diseases can be cared for in general hospitals with no danger to other patients. Physicians of the state should educate the public, therefore, the report states, so that it will be possible to care for tuberculosis and communicable diseases in general hospitals.

DISTRICT OF COLUMBIA

Tour of French Physicians.—An official tour of three physicians, appointed by the French ministry of labor and health, began recently at Washington. The visiting physicians are Drs. André Bloch, J. M. Le Mee and Jean Dalsace, who have come to study surgical and medical methods used in the United States. They will go on to Baltimore, Chicago, Detroit, Rochester, New York and Boston.

FLORIDA

Yale Establishes Monkey Farm at Orange Park.—The Rockefeller Foundation has given $500,000 to Yale University, New Haven, Conn., which will be used to establish a laboratory station on a 200 acre tract at Orange Park for the breeding and scientific study of anthropoid apes. A special laboratory will be built in which will be made a detailed observation of the habits, social relations, life history and psychobiologic development of the chimpanzee, the gorilla, the orangutan and the gibbon. It is thought the exhaustive studies of anthropoids will be of great importance in connection with the program of the Institute of Human Relations at Yale. The studies will include problems in physiology, behavioral adaptivity, mental defects and diseases among the apes, and it will be under the general supervision of Robert M. Yerkes, Ph.D., who has been at work at Yale for five years on comparative psychobiology. There will be an advisory council including representatives of Yale and Edwin G. Conklin, Ph.D., Princeton University; Dr. Milton J. Greenman of the Wistar Institute, Philadelphia; Dr. Theobald Smith of the Rockefeller Institute; Clark Wissler, Ph.D., of the American Museum of Natural History, New York; Dr. H. Gideon Wells of the University of Chicago, and John C. Merriam, Ph.D., president of the Carnegie Institution of Washington.

ILLINOIS

Personal.—Dr. George Hoffman, after about twelve years' service as physician at the prison at Chester, has resigned, effective January 1, to devote his time to private practice.——The home of Dr. and Mrs. Christian H. Diehl, Effingham, is reported to have been destroyed by fire, Dec. 19, 1929.

Society News.—Dr. Joseph K. Calvin, Chicago, gave an illustrated lecture on "Nephritis in Children" before the Livingston County Medical Society, Pontiac, Dec. 19, 1929.——At a meeting of the Winnebago County Medical Society, Dec. 3, 1929, at Rockford, Dr. Harry B. Culver of Northwestern University Medical School, Chicago, spoke on "Trauma as a Factor in Genito-Urinary Diseases," and Dr. James G. Carr, Jr., of Northwestern University Medical School, "Diagnosis of Early Cardiac Failure."——Dr. Carl E. Black, Jacksonville, was elected president of the Western Surgical Association for the ensuing year at the recent meeting in Del Monte, Calif.

Chicago

Impostor K. N. Marx Convicted.—Kurt N. Marx, 4336 Sheridan Road, Chicago, was convicted before Judge Holmes, Dec. 10, 1929, for violation of the medical practice act, and was sentenced to six months in the Bridewell. The conviction was secured through the activities of the department of registration and education. According to the report, Marx examined a 15-year-old girl at the request of her father, who believed that Marx was a registered physician. Marx called at the girl's home where, after making an examination, he told the mother that her daughter had syphilis. He then collected $40 from the father, claiming that he would send to Germany for medicines to be used in treating this disease. Marx also examined the father and advised him that he had tuberculosis. He examined an uncle of the girl, from whom he collected money for treatment but which he returned after his arrest.

Society News.—Dr. Fritz Wittels, Vienna, will lecture, January 6, 8 and 10, at the Chicago Woman's Club under the auspices of the Illinois Society for Mental Hygiene and the Chicago Association for Child Study and parent education on "Psychoanalysis and Other Contemporary Schools," "Freud's Idea on Sex and the Super-Ego" and "Comparison of the Primitive, the Child and the Dream Mind." The fee for the course is $2.50.——The Chicago Dental Society will hold its annual congress at the Stevens Hotel, January 13-15. A symposium on avitaminoses will be presented by Dr. Simeon B. Wolbach, Shattuck professor of pathology and anatomy, Harvard University Medical School; Dr. Edward H. Hatton, professor of pathology, Northwestern University Dental College, and Milton T. Hanke, Ph.D., professor of pathology, University of Chicago. Many other speakers will take part in this program. Physicians are especially invited to attend the foregoing symposium.

INDIANA

Thirty-Six Dead in Meningitis Epidemic.—The outbreak of cerebrospinal meningitis at Indianapolis up to Dec. 30, 1929, is reported to have caused thirty-six deaths, and there were a number of cases under treatment. The type of this outbreak was said to be unusually virulent. Extensive measures had been taken to prevent the infection from attacking other communities, but a small outbreak was reported at Columbus, Ind.

Society News.—After the business meeting of the Tippecanoe County Medical Society, Dec. 12, 1929, the members and their families spent the remainder of the evening at bridge and euchre. The secretary, Dr. John C. Burkle, believes that county medical societies would benefit by more frequent social gatherings in which the families take part.——Dr. John A. MacDonald was elected president of the Indianapolis Medical Society at its meeting in Indianapolis, Dec. 4, 1929.——Dr. Fred N. Daugherty has been appointed health officer of Crawfordsville, it is reported, to succeed Dr. Thomas Z. Ball.

IOWA

Society News.—The Calhoun County Medical Society conducted a symposium, Nov. 21, 1929, on "An Obstetric Platform." Dr. Palmer Findley, Omaha, presided. Dr. Fred L. Adair, of the University of Chicago Medical School and chairman of the joint committee on maternal welfare appointed by the American Medical Association, gave an address on "The General Practitioner and Obstetrics"; many Iowa physicians took part in the symposium.——The Fayette County Medical Society held an all day meeting, Nov. 26, 1929, beginning with a surgical clinic at the Mercy Hospital in the forenoon. Dr. George L. Apfelbach, Chicago, conducted diagnostic clinics at the same hospital in the afternoon. In the evening, Dr. Apfelbach presented a paper on "Surgery in Diabetic Gangrene," illustrated. ——The Polk County Medical Society, Des Moines, at the November, 1929, meeting, was addressed by Drs. A. G. Fleischman and L. E. Kelley on bilateral polycystic kidney, after which a three reel motion picture of infections of the hand was shown. ——The Woodbury County Medical Society held a noonday dinner meeting, Nov. 22, 1929, in Sioux City, the speakers being the mayor, Mr. T. B. Huff, the superintendent of schools, Mr. M. G. Clark, the city attorney, Mr. H. C. Shull, and the new city physician, Dr. E. B. Godfrey. At the scientific session,

Dr. Frank S. Hough, Sibley, spoke on "Tenaculum Splints for Gastro-Enterostomy and Intestinal Anastomosis"; Dr. George E. Neuhaus of Omaha gave an address on "Mild Forms of Manic-Depressive Psychosis, Their Diagnosis and Management." —— At the annual fall meeting of the Iowa Clinical Medical Society, Nov. 2, 1929, a symposium on cardiac conditions was presented; also papers on hypertension, Paget's disease, malta fever and spondylitis.

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PENNSYLVANIA

Chamber of Commerce Appoints Medical Council.—Following several months of preparation, the Chamber of Commerce of Pittsburgh has organized a medical council to work in a different field than the health committee which the chamber already has. Its program will include work of more particular interest and benefit to the medical profession and, according to an item in the *Pittsburgh Medical Bulletin*, will be interested in professional legislation and opposed to legislation that is harmful to public health or to the profession. The chairman of the council is Dr. Russell R. Jones and the vice chairman. Dr. Walter F. Donaldson, secretary, Medical Society of the State of Pennsylvania, and Dr. Seymour B. Moon.

Salaries of Hospital Superintendents Reduced.—The *Pennsylvania Medical Journal* says that the state executive board issued an order, effective Jan. 1, 1929, reducing the salaries of all state hospital superintendents to $8,000 and maintenance. The boards of trustees and superintendents of the state hospitals at Shamokin, Coaldale and Ashland protested against the ruling. The trustees of these three hospitals refused to obey the executive board's order, and paid the superintendents their original salaries until June 1, when the administration of all state funds was taken over by the department of revenue, and the state department of welfare refused to approve the requisition for the higher salary. The state executive board announced, Oct. 31, 1929, that it would rescind its action so far as the superintendents of these three institutions are concerned, and that their original salaries of $10,000 a year and maintenance would be restored. These three superintendents will be given their back pay at the set rate. It is understood that, when any of the three vacate their positions, their successors will be paid only $8,000 and maintenance. The three superintendents are Dr. George W. Reese, Shamokin; Dr. Edgar E. Shifferstine, Coaldale, and Mr. H. D. Lindermuth, Ashland.

Philadelphia

Dr. Jackson Resigns from University of Pennsylvania.—Since the recent announcement of the resignation of Dr. Chevalier Jackson from the faculty of Jefferson Medical College, his resignation from the faculty of the University of Pennsylvania Graduate School of Medicine has been announced. Dr. Jackson will devote himself to the development of the bronchoscopic clinic at Samaritan Hospital and to his professorship at Temple University School of Medicine. Both resignations become effective next June. He will continue, however, as William Potter Memorial lecturer at Jefferson, that appointment having been for life when established two years ago. The bronchoscopic clinic at Jefferson is to be directed by Dr. Louis H. Clerf and Dr. Edmon Auccin, until recently of Paris, and the bronchoscopic clinic at the University of Pennsylvania by Dr. Gabriel Tucker. The bronchoscopic clinic at the Samaritan Hospital, Broad and Ontario streets, is fully equipped and will open this month. Dr. Jackson will be assisted by his son, Dr. Chevalier L. Jackson, who will be clinical professor of bronchoscopy and esophagoscopy, and by Dr. Emily L. Van Loon, who will be chief of the clinic.

RHODE ISLAND

Society News.—Dr. George W. Waterman addressed the Providence Medical Association, Nov. 4, 1929, on "Organotherapy in Gynecology"; he expressed the opinion, the *Rhode Island Medical Journal* says, that the value of commercial glandular products has been very small.——Dr. John D. Adams, Boston, read a paper before the Rhode Island Medico-Legal Society, recently, entitled "On the Witness Stand."——The Providence Medical Association was addressed, Oct. 7, 1929, by Dr. James W. Leech on "The Gradenigo Syndrome," and by Dr. Wilfred Pickles on "Technic and Value of Encephalography."

TENNESSEE

Sir William Hardy to Deliver Flexner Lectures.—The dean of Vanderbilt University School of Medicine, Nashville, announces that the Abraham Flexner Lectures for 1930-1931 will be delivered by Sir William Hardy of Cambridge University. Sir William, who was knighted for contributions to science, has delivered the Croonian and Bakerian lectures in England. He is a past secretary of the Royal Society, and now is conducting experiments on the cold storage and preservation of foods for the British government. He is director of the Low Temperature Research Station of Biochemistry and Biophysics at Cambridge. The first series of the Flexner lectures was delivered last year by Dr. Heinrich Pohl, director of the Anatomic Institute of Hamburg, Germany.

WASHINGTON

Personal.—An oil painting by Dr. Frederick W. Southworth, Tacoma, was selected for reproduction on the cover of an early number of the *Literary Digest;* it depicts a water scence at Tacoma. The *Literary Digest* used one of Dr. Southworth's paintings similarly several years ago.

Society News.—Dr. Frank R. Menne, Portland, addressed the Dec. 10, 1929, meeting of the Walla Walla Valley Medical Society on "Ulcerative Colitis," and Dr. James Marr Bisaillon, Portland, "Differential Diagnosis of Pulmonary Tuberculosis." The society will be addressed, January 9, by Drs. Charles B. Ward, Spokane, on "Cancer of the Lip," and by Andrew A. Matthews on "Injection Treatment of Varicose Veins."——Dr. George E. Price will address the King County Medical Society, January 6, on "Epidemic Encephalitis Ten Years After."

WISCONSIN

Personal.—Thirty-six oil paintings collected by the late Dr. Ernst Copeland, Milwaukee, were on exhibition, Nov. 7-Dec. 15, 1929, at the Layton Art Gallery, to which Dr. Copeland bequeathed all of these paintings except three. His water colors and etchings will be exhibited later. A bust of Dr. Copeland was presented recently to the Milwaukee Academy of Medicine, the original having been modeled from life by Dr. Henry B. Hitz.——Dr. William S. Miller, emeritus professor of anatomy at the University of Wisconsin Medical School, has been elected an honorary member of the Connecticut State Medical Society.

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PENNSYLVANIA

Chamber of Commerce Appoints Medical Council.—Following several months of preparation, the Chamber of Commerce of Pittsburgh has organized a medical council to work in a different field than the health committee which the chamber already has. Its program will include work of more particular interest and benefit to the medical profession and, according to an item in the *Pittsburgh Medical Bulletin*, will be interested in professional legislation and opposed to legislation that is harmful to public health or to the profession. The chairman of the council is Dr. Russell R. Jones and the vice chairman. Dr. Walter F. Donaldson, secretary, Medical Society of the State of Pennsylvania, and Dr. Seymour B. Moon.

Salaries of Hospital Superintendents Reduced.—The *Pennsylvania Medical Journal* says that the state executive board issued an order, effective Jan. 1, 1929, reducing the salaries of all state hospital superintendents to $8,000 and maintenance. The boards of trustees and superintendents of the state hospitals at Shamokin, Coaldale and Ashland protested against the ruling. The trustees of these three hospitals refused to obey the executive board's order, and paid the superintendents their original salaries until June 1, when the administration of all state funds was taken over by the department of revenue, and the state department of welfare refused to approve the requisition for the higher salary. The state executive board announced, Oct. 31, 1929, that it would rescind its action so far as the superintendents of these three institutions are concerned, and that their original salaries of $10,000 a year and maintenance would be restored. These three superintendents will be given their back pay at the set rate. It is understood that, when any of the three vacate their positions, their successors will be paid only $8,000 and maintenance. The three superintendents are Dr. George W. Reese, Shamokin; Dr. Edgar E. Shifferstine, Coaldale, and Mr. H. D. Lindermuth, Ashland.

Philadelphia

Dr. Jackson Resigns from University of Pennsylvania.—Since the recent announcement of the resignation of Dr. Chevalier Jackson from the faculty of Jefferson Medical College, his resignation from the faculty of the University of Pennsylvania Graduate School of Medicine has been announced. Dr. Jackson will devote himself to the development of the bronchoscopic clinic at Samaritan Hospital and to his professorship at Temple University School of Medicine. Both resignations become effective next June. He will continue, however, as William Potter Memorial lecturer at Jefferson, that appointment having been for life when established two years ago. The bronchoscopic clinic at Jefferson is to be directed by Dr. Louis H. Clerf and Dr. Edmon Auccin, until recently of Paris, and the bronchoscopic clinic at the University of Pennsylvania by Dr. Gabriel Tucker. The bronchoscopic clinic at the Samaritan Hospital, Broad and Ontario streets, is fully equipped and will open this month. Dr. Jackson will be assisted by his son, Dr. Chevalier L. Jackson, who will be clinical professor of bronchoscopy and esophagoscopy, and by Dr. Emily L. Van Loon, who will be chief of the clinic.

RHODE ISLAND

Society News.—Dr. George W. Waterman addressed the Providence Medical Association, Nov. 4, 1929, on "Organotherapy in Gynecology"; he expressed the opinion, the *Rhode Island Medical Journal* says, that the value of commercial glandular products has been very small.——Dr. John D. Adams, Boston, read a paper before the Rhode Island Medico-Legal Society, recently, entitled "On the Witness Stand."——The Providence Medical Association was addressed, Oct. 7, 1929, by Dr. James W. Leech on "The Gradenigo Syndrome," and by Dr. Wilfred Pickles on "Technic and Value of Encephalography."

TENNESSEE

Sir William Hardy to Deliver Flexner Lectures.—The dean of Vanderbilt University School of Medicine, Nashville, announces that the Abraham Flexner Lectures for 1930-1931 will be delivered by Sir William Hardy of Cambridge University. Sir William, who was knighted for contributions to science, has delivered the Croonian and Bakerian lectures in England. He is a past secretary of the Royal Society, and now is conducting experiments on the cold storage and preservation of foods for the British government. He is director of the Low Temperature Research Station of Biochemistry and Biophysics at Cambridge. The first series of the Flexner lectures was delivered last year by Dr. Heinrich Pohl, director of the Anatomic Institute of Hamburg, Germany.

WASHINGTON

Personal.—An oil painting by Dr. Frederick W. Southworth, Tacoma, was selected for reproduction on the cover of an early number of the *Literary Digest;* it depicts a water scene at Tacoma. The *Literary Digest* used one of Dr. Southworth's paintings similarly several years ago.

Society News.—Dr. Frank R. Menne, Portland, addressed the Dec. 10, 1929, meeting of the Walla Walla Valley Medical Society on "Ulcerative Colitis," and Dr. James Marr Bisaillon, Portland, "Differential Diagnosis of Pulmonary Tuberculosis." The society will be addressed, January 9, by Drs. Charles B. Ward, Spokane, on "Cancer of the Lip," and by Andrew A. Matthews on "Injection Treatment of Varicose Veins."——Dr. George E. Price will address the King County Medical Society, January 6, on "Epidemic Encephalitis Ten Years After."

WISCONSIN

Personal.—Thirty-six oil paintings collected by the late Dr. Ernst Copeland, Milwaukee, were on exhibition, Nov. 7-Dec. 15, 1929, at the Layton Art Gallery, to which Dr. Copeland bequeathed all of these paintings except three. His water colors and etchings will be exhibited later. A bust of Dr. Copeland was presented recently to the Milwaukee Academy of Medicine, the original having been modeled from life by Dr. Henry B. Hitz.——Dr. William S. Miller, emeritus professor of anatomy at the University of Wisconsin Medical School, has been elected an honorary member of the Connecticut State Medical Society.

Short Course for Practitioners.—A special course in clinical pathology for physicians will be given at the University of Wisconsin Medical School, Madison, January 2-4, by Dr.

William D. Stovall, director of the state laboratory of hygiene. The fee will be $10. The course will include the preparation of paraffin and frozen sections, also a discussion of the dyes used for staining and their preparation. The second day will be devoted to hematology, the leukemias and anemias being emphasized. The third day will be given over to demonstrations in renal function tests and examination of urine and to demonstrations of blood cultures and smears, and to the bacteriology of stools and urines.

Society News.—Dr. Arthur J. Cramp, director, Bureau of Investigation, headquarters, American Medical Association, Chicago, addressed the annual meeting of the Medical Society of Milwaukee County, Dec. 12, 1929, on "The Nostrum and Public Health."——The Chippewa County Medical Society, Chippewa Falls, was addressed, Nov. 5, 1929, by Drs. William A. Plummer and Fred W. Gaarde, Rochester, Minn., on "Early Diagnosis of Diseases of the Thyroid" and "Value of Skin Sensitization Tests in the Diagnosis of Asthma and Allied Conditions," respectively.——At a joint meeting of the Racine County medical and dental societies, Racine, Nov. 27, 1929, Dr. George V. I. Brown, Milwaukee, spoke on "Plastic and Oral Surgical Considerations That are Important to the Practice of General Surgery, Dentistry and Medicine."——The Washington-Ozaukee County Medical Society was addressed, Nov. 14, 1929, by Drs. Ralph M. Waters and John W. Harris, Madison, on "Ether, Anesthesia," and "Puerperal Sepsis," respectively.——The Milwaukee Academy of Medicine was addressed, Nov. 12, 1929, by Dr. Frank C. Mann, Rochester, Minn., on "Observations on Reduced Liver Function."——At a joint meeting of the First and Second councilor district medical societies, Madison, Nov. 14, 1929, Drs. Joseph C. Bloodgood, Johns Hopkins University Medical School, Baltimore, and Phillips F. Greene spoke on cancer; Dr. William F. Lorenz, Madison, on "The Psychosis of Change of Life"; Dr. Paul A. O'Leary, Rochester, Minn., on "Developments in Diagnosis and Treatment of Syphilis," and Dr. William A. Plummer, Rochester, Minn., on "A Phase of the Thyroid Gland."——Dr. George M. Curtis, Chicago, addressed the Marathon County Medical Society, Wausau, Dec. 11, 1929, on "Some Unusual Forms of Goiter."

GENERAL

Official Reports of Death Rates.—The U. S. Department of Commerce has announced the annual mortality rates per hundred thousand of population for the year 1928 of the following states, in addition to those published in THE JOURNAL, Nov. 9, 1929:

Connecticut, 1,076.1, as compared with 1,024.3 in 1927.
Florida, 1,342.5, as compared with 1,331.7 in 1927.
Iowa, 1,042.6, as compared with 1,011.6 in 1927.
Washington, 1,253.7 as compared with 1,021.1 in 1927.
Michigan, 1,193.5 as compared with 1,127.9 in 1927.
Alabama, 1,237.7 as compared with 1,061.7 in 1927.
Pennsylvania, 1,213.8 as compared with 1,143.4 in 1927.
New York, 1,312.9 as compared with 1,233.5 in 1927.
Utah, 962.1 as compared with 907.5 in 1927.
California, 1,451.0 as compared with 1,388.2 in 1927.
Arkansas, 1,028.7 as compared with 952.2 in 1927.
Oklahoma, 863.7. (Oklahoma was added to the registration area in 1928.)
North Carolina, 1,230.8 as compared with 1,136.2 in 1927.
Ohio, 1,174.9 as compared with 1,095.6 in 1927.

Entrance Requirements Force American Students Abroad.—An unprecedented demand from American medical students for admission to British and Scottish universities has been reported by the Institute of International Education, New York. It is attributed to the tightening of admission requirements in American medical schools. The University of Edinburgh is said to have been obliged to institute an American quota, as fifty or more applications were recently received from graduates in America with advanced credits. Some of these would be admitted to the first year class of the university medical school, but no exemptions of any kind would be granted. The University of Paris Faculty of Medicine is averse to accepting American students who do not have a bachelor's degree, and since the medical school is too crowded already to justify special exemptions for foreigners, it usually takes several months before a decision can be made on an application from America. The attitude of the German and Austrian medical authorities toward medical students from America is friendly, but the conditions of admission are about the same as in France and Great Britain. The Institute of International Education has just published the tenth annual report of the director, Stephen P. Duggan, Ph.D. He discusses the exchange fellowships, visiting professorships and the work student movement, and gives a tabulation of the number of students from other countries who have been admitted to universities in the United States in recent years. It is interesting to note that the number of students from the Philippine Islands in the scholastic year 1928-1929 was 1,073, or nearly double the number for the year 1921-1922; the number of students from England in American universities increased to 369 from 138. The German students increased during this time from 49 to 360. The French students in this country showed a slight decrease.

Dental Association Establishes Council on Therapeutics.—The American Dental Association announces the formation of a council to deal with dental materia medica and therapeutics. The council will aid the dental profession to rationalize further its materia medica and therapeutics by fostering a spirit of chemical mindedness and will aim to protect the dental profession and public against fraud, undesirable secrecy and objectionable advertising of proprietary dental remedies. At present the council will confine its attention to the examination of drugs and dental proprietaries for inclusion in an "accepted list"; it is planned, however, eventually to consider ceramic and metallurgic products and physical therapeutic apparatus in the dental field. The council will also endeavor to improve pharmacologic and biochemical instruction in dental colleges. Invitations to serve on the council have been accepted by the following:

Paul J. Hanzlik, M.D., professor of pharmacology, Stanford University School of Medicine.
Percy R. Howe, D.D.S., professor of dental science, Harvard University, and director, Forsyth Dental Infirmary for Children, Boston.
Milan A. Logan, Ph.D., instructor, department of biologic chemistry, Harvard University Medical School.
Arno B. Luckhardt, M.D., professor of physiology, University of Chicago.
John A. Marshall, D.D.S., associate professor of dental pathology and biochemistry, University of California College of Dentistry.
Victor C. Myers, Ph.D., professor of biochemistry, Western Reserve University.
John P. Norton, Ph.D., chief of laboratories, department of health, Detroit, former professor of bacteriology and hygiene, University of Chicago.
Ura G. Rickert, D.D.S., professor of physiologic chemistry, hygiene and therapeutics, University of Michigan School of Dentistry.
Harold S. Smith, D.D.S., practicing dentist, Chicago.

Ex officio members of the council will be: C. N. Johnson, D.D.S., editor, *Journal of the American Dental Association;* Harry B. Pinney, D.D.S., secretary, American Dental Association, and Samuel M. Gordon, Ph.D., American Dental Association chemist and former National Research Council Fellow in the biologic sciences, who has been appointed secretary of the council. The first meeting was held in Chicago, January 3-4.

Medical Bills in Congress.—H. R. 3395, proposing to authorize the Commissioner of Prohibition to pay for information concerning violations of the narcotic laws of the United States, has been favorably reported to the House (report 91). S. 2368, introduced by Senator McNary, Oregon, proposes to authorize the establishment of a branch home of the National Home for Disabled Volunteer Soldiers at or near Roseburg, Ore. S. 2515, introduced by Senator Hale, Maine, and H. R. 6848, introduced by Representative Britten, Illinois, propose to allow the rank, pay and allowance of a colonel, Medical Corps, United States Army, or of a captain, Medical Corps, U. S. Navy, to any medical officer below such rank, assigned to duty as physician to the White House. S. 2765, introduced by Senator Wheeler, Montana, proposes to create a federal child relief board to have power to purchase food and clothing for children, to pay cash to parents of children in distress, and otherwise to provide for their welfare, and proposes to authorize an appropriation of $25,000,000 to carry out the provisions of the bill. S. 2819, introduced by Senator Schall, Minnesota, proposes to create a bureau of welfare of the blind in the Department of Labor and to authorize the issuing of licenses to blind persons to operate stands in federal buildings. H. R. 7501, introduced by Representative Griffin, New York, proposes to authorize the President to present a medal of honor and written testimonial to scientific workers of the government whose labors have contributed to the advancement of scientific knowledge or applied its truths in a practical way for the welfare of the human race. H. R. 7627, introduced by Representative Black, New York, proposes to create the United States Board of Psychiatrists to diagnose and prescribe treatment for all mentally deranged veterans in the care of the United States, to make a comprehensive study of mental diseases and treatments, and to recommend to the Commissioners for the Promotion of Uniformity in Legislation a code of ethics to govern the appearance of alienists as expert witnesses. H. R. 7766, introduced by Representative Johnson, Oklahoma, proposes to amend the World War Veterans' Act to provide that if any veteran suffers of a chronic disease which competent medical judgment indicates was incurred, increased or aggravated in service, such disease shall be considered of service origin or aggravation, notwithstanding lack of historical affirmative evidence. H. R. 7823, introduced by Representative Merritt, Connecticut, proposes to amend the Federal Caustic Poison Act to

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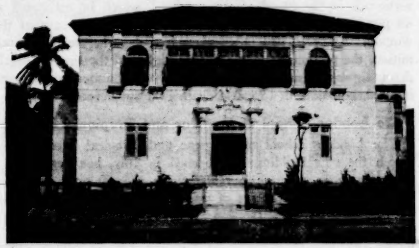
exempt from its provisions cerium oxalate and to provide that the act shall not be construed to apply to a sale to or on the prescription of a physician, dentist or veterinarian, or to the sale of fine chemicals for professional or scientific use. H. R. 7825, introduced by Representative Rankin, Mississippi, proposes to amend the World War Veterans' Act to extend from Jan. 1, 1925, to Jan. 1, 1930, the period within which if a neuropsychiatric disease and spinal meningitis, an active tuberculosis disease, paralysis agitans, encephalitis lethargica or amebic dysentery develops a 10 per cent degree of disability, the disability shall be presumed of service origin, and to create a service-origin presumption for any chronic constitutional disease or analogous disease, evidencing itself prior to Jan. 1, 1930, which develops a 10 per cent degree of disability. H. R. 7884, introduced by Representative Zihlmann, Maryland, proposes to prohibit experiments on living dogs in the District of Columbia.

LATIN AMERICA

Porto Rico Society Opens New Home.—During the annual meeting of the Medical Association of Porto Rico at San Juan, Dec. 21-23, 1929, the new home of the association,



illustrated here, was opened. There are two large assembly rooms, library, exhibit rooms and offices. The new building is on a lot of 1,230 square meters in the residential section of San Juan. This organization is a constituent society of the American Medical Association.

FOREIGN

Another Epidemic of Psittacosis.—More than twenty cases of psittacosis had been reported in Berlin, Dec. 28, 1929. Up to that time three of the patients had died (THE JOURNAL, Nov. 9, 1929, p. 1482).

Russia Honors Professor Pavlov.—On returning recently from a visit to the United States, Prof. Ivan Pavlov was given $50,000 by the Soviet Government of Russia for his physiologic laboratory in Leningrad in commemoration of his eightieth birthday. The Russian government also closed to traffic, it is reported, one of the city's streets so that the noise will not interfere with Professor Pavlov's experimental work.

Rockefeller Gives Millions to the Sorbonne.—It was announced, Dec. 26, 1929, that the Rockefeller Foundation, New York, had given $6,000,000 to rebuild the Sorbonne Medical School, Paris, France, on condition that the French government contribute an equal amount. The buildings of the medical school are said to be small and poorly equipped although some of the most renowned scientists serve there. According to the Chicago *Tribune*, the dean said that the buildings were not adequate when the number of students was one fifth as large as it is now. The site for the proposed new school is on the banks of the Seine, back of Notre Dame Cathedral, where the wine mart of 11 acres now stands.

Deaths in Other Countries

Jaime Ferran, Nov. 22, 1929, aged 77, at Barcelona. Dr. Ferran was the first to prepare a vaccine against cholera in man; he was also widely known for research on the bacteriology of tuberculosis.——**Sir Archdall George O'Brien Reid,** Nov. 18, 1929, at Southsea, England; Dr. Reid was the author of "Principles of Heredity," "Alcoholism: A Study in Heredity," and "Present Evolution of Man."——**Sir William Milligan,** London, author of books on ear and throat diseases, Dec. 20, 1929, aged 65.——**Prof. Giovanni Mingazzini,** chief of the Neuropsychiatric Clinic of Rome, and Honorary Fellow of the American Medical Association, Dec. 3, 1929.——**Dr. Domingo Cabred,** Argentina, for many years director of Mercedes Hospital, Buenos Aires, Nov. 28, 1929, aged 70.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 7, 1929.

The Analysis of Structure by the X-Rays

Sir William Bragg, F.R.S., whose investigations of crystalline structure by the x-rays are well known, delivered the Huxley lecture on Recent Advances in Science in Their Relation to Practical Medicine. He said that analysis of structure by the x-rays should contribute to the advance of biology and medicine, because it opened up a new direction of inquiry into the relations between the properties of matter, organic and inorganic, and of atoms and molecules. The cell had been studied by the microscope, but between the formation of matter into molecules and the complicated structure of the cell lay a region which had hitherto been outside the range of vision. After forming atoms into molecules, nature's next step in making a solid body was to group the molecules in regular array. Sometimes the attempt was highly successful and the result was a visible crystal, but the beginnings of the formations in many cases escaped human vision and had now been made clear by the x-rays. When radiation, such as light or the x-rays, was scattered by the regularly arranged molecules, the scattered radiation proceeded in certain directions only, which showed the nature of the arrangement to which they were due. Thus the x-rays were fitted to show the peculiar and universal tendency of nature to build by the ordered array of molecules as a house is built of bricks. Cellulose was taken as an example. The work of H. Mark in Germany and of others resulted in fairly definite conclusions. Nature's plan involved, first, the formation of long chains of molecules of the dextrose type. These chains were then tied together in bundles of considerable length compared to their thickness. A fiber of cotton contained an innumerable mass of these bundles, which lay with some irregularity; but when the fiber was stretched they began to arrange themselves along its length. If the stretching was not too great, the fiber recovered itself; but if excessive, the bundles slid past one another and finally the thread broke. Thus arose an extremely remarkable view of these structures. Nature from the beginning adopted on a minute scale the human design followed in the construction of a rope. Long and short fibers were so mixed and twisted together and resisted slipping to such an extent that the whole formed a long and flexible thread of great strength. The attack on the question had now been carried to the much more complicated structure of wool and hair. Professor Bragg showed some results obtained in the textile department of Leeds University which went far to prove the parallelism between cotton and woolen fibers. He thought that the same structure would be found in nerve and muscle as in wool and hair. Thus the new methods had helped to illuminate the formation of living substances out of the original atoms and molecules.

Prehistoric Man at the Royal College of Surgeons

The department of human osteology at the Royal College of Surgeons has received three large and important collections:

1. Human remains from the deepest and oldest graves discovered at Ur of the Chaldees by the combined British Museum and Pennsylvania University expedition under Mr. Leonard Wooley. These are somewhat fragmentary and fragile, but with great care and patience one of the museum staff, Ernest Smith, has succeeded in piecing the parts together and restoring form to skulls and limb bones more than 5,000 years old.

2. Human remains from a cave at Shukbah, Mount Ephraim, excavated by Miss D. Garrod for the British School of Archeology in Jerusalem. In the deepest stratum she discovered the type of instruments used by Neanderthal man and some frag-

ments of his skull. In the upper strata she found the remains of people of the modern type with long, narrow heads and of short stature. It is thought that full examination of this collection will throw light on the evolution and distribution of prehistoric races of the East.

3. Human remains brought by Mr. L. S. B. Leakey, leader of the East African archeologic expedition from ancient human sites in Kenya Colony. These fossil remains do not represent a race now living in Africa and further inquiry is necessary to determine their exact racial affinities. It is considered that Mr. Leakey has opened up new and important sources of information concerning the history of man in Africa.

The Health of the School Child

In his annual report, Sir George Newman, chief medical officer of the board of education, says that all progressive social legislation is based on the intimate connection between public health and education. He refers to the problem of the preschool child, which at present seems to fall between two stools—the education authority and the health authority. Until we can carry out arrangements for dealing with disease in early childhood we shall be subjected to a great mass of preventable disease which contravenes education and frustrates the treatment of the school child. It is wasteful that the system of organized public health should be so restricted. The difficulty might be solved by extending the advantages of the existing school services to all children below 5, or by establishing special institutions (nursery schools, day nurseries, nursery classes) or by domiciliary health visitation, or by a combination of these methods). We should first conceive the minimal standard of health for all school children and then deal with the particular health problems of special groups of children. The minimal standard should be available for all school children, the cost being adjusted between the parent and the state. The primary task of the state or municipality is to lay a universal foundation, a national minimum of health service applicable to every child. To complete such a minimum and make it effective, it is necessary to provide for special groups of children suffering from special diseases, such as tuberculosis, rickets, rheumatism and mental defect. It is estimated that we have 300,000 dull, backward and retarded children of school age and about 100,000 educable mental defectives. Sir George thinks that what is most needed is a fuller appreciation by the medical profession of the importance of dealing with mental disease like other diseases, physically, mentally and psychologically. The special study of mental disease and the establishment of mental clinics or centers for early diagnosis and treatment are necessary. The report on the children leaving school is highly satisfactory. In every improvable particular the children on leaving school were superior to those of the age of 12 years. Of the four examinations—at entry, at 8, at 12 and on leaving—the last was the best. In London in 1928, those who were leaving were better nourished, superior in personal hygiene, had better visual acuity, and manifested less tonsillar and adenoid growths, less ear disease and less anemia and heart defect than the children of 12. An added year to the school age (which the government is introducing) would be of physical benefit and prove particularly beneficial in two directions: in the teaching and practice of hygiene in adolescence and in the closer vocational guidance and selection of adolescents entering industry. Here again is proposed another step on the path of socialism.

The Lowest Birth Rate Again

The decline in the birth rate continues. The return for the quarter ended September 28 was the lowest recorded for any third quarter, and the mortality of infants under 1 year was 6 per thousand births, lower than the average of the preceding third quarters. The live births corresponded to an annual rate of 16.4 per thousand of the population and was 0.3 per thousand below the corresponding quarter of 1928 and 0.1 below 1927, the lowest previously recorded. The death rate was 9.7 per thousand, 0.03 above that of last year. The natural increase of population by excess of births over deaths was 67,170, against increases of 84,132, 71,616 and 71,960 in the preceding third quarters of 1926, 1927 and 1928.

Carbon Monoxide Poisoning from the Fumes of a Gas Boiler

A man, aged 37, and his wife, aged 30, were found dead on the floor of their bathroom from carbon monoxide poisoning. The circumstances were unusual in that the poisoning was not due to a geyser in the bath room but to a gas boiler in the kitchen beneath. The fumes appeared to have ascended by a chute which led from the kitchen to the bathroom. There was no vent or flue from the boiler to the open air, but the makers said that this was unnecessary. However, the manager of the gas company stated in evidence that a vent pipe or flue was necessary. Dr. Roche Lynch, government analyst, found carbon monoxide in the blood of the deceased, which he estimated at 48 per cent in the case of the man and 49 in the case of the woman. As death had taken place four days before his examination, the percentage was probably higher at the time of death. A small proportion, say 0.05 per cent, of carbon monoxide would, he said, be sufficient to cause death in a small room.

The London School of Hygiene and Tropical Medicine

The London School of Hygiene and Tropical Medicine, of which the new building was opened in July, has organized a new course to prepare candidates for the diploma in public health. Two large centers of public health administration have been secured as demonstration areas. The courses of study in tropical medicine and hygiene include a special short course in hygiene for business or professional men and women proceeding to the tropics.

Reform in the Treatment of Insanity

In the house of lords, Earl Russell introduced a government bill to enable mental disease to be treated more effectually in its early stages. At present no organized treatment is possible until a person is certified as insane, when he is consigned to what used to be called "a lunatic asylum." The bill deals with the recommendations of a royal commission which reported in 1926. Earl Russell referred to the impossibility of treatment until the disease reached an aggravated state. What would be thought if they did not treat a case of scarlet fever until the patient reached an advanced stage? The evolution of asylums from mere places of detention to real hospitals was an important advance. An asylum was no longer a prison where a man was confined that he might not harm himself or others, but a place where he was treated in the hope of cure. The incidence of insanity had remained much the same in the period for which figures were available. The rate per 10,000 of population was 4.07 in 1869 and 4.48 in 1927. The recovery rate had improved but not as much as one could have hoped. The bill provides that a person suffering from mental disorder who desires voluntarily to submit himself to treatment may, without a reception order and without any formality beyond a written application, be received as a voluntary boarder. He cannot leave at a moment's notice; he must give seventy-two hours' notice. The reason for this restriction was that the occasion on which the patient would insist on leaving would probably be just the time when he had become so mentally unbalanced as not to be able to look after himself. The delay would give him an opportunity to return to a better frame of mind and withdraw his notice. Another clause provides for what is called the temporary boarder—a person suffering from mental disorder and for the time incapable of volition, who is likely to benefit by temporary treatment. After the application he must be examined by two physicians. There will be no interposition of a magistrate, as at present. One of the two physicians must be the patient's usual medical attendant or, if

not, a person officially appointed who does not have any interest in the matter of an improper kind. The bill also provides some much needed protection for physicians who sign certificates. Recent actions, particularly the Harney case, in which a large award was made against a physician, have frightened physicians from giving certificates of insanity in perfectly proper cases. By the bill, physicians are not given immunity but the onus is shifted. The plaintiff must satisfy a judge that there is a prima facie case that requires investigation. Lord Dawson, physician to the London Hospital, welcomed the bill as an attempt at last to adapt legal enactments to informed opinion. The object in mental, as in bodily, disease was early diagnosis and early treatment. With a civilization in which material progress was going far ahead of man's powers of adaptation, they must get a larger number of temporary mental troubles. But he appealed for getting rid of the word "boarders." Those concerned were not boarders; they were patients just as much as patients suffering from physical disease. The bill was read a second time.

Regulation of Labor of the Young

Mr. Sorensen, a labor member, has introduced into the house of commons a bill for the protection of the young who are employed. He said that it was estimated that a million children under 18 were employed without any special protections by government or trade union agreement. Many van boys worked twelve and fourteen hours a day. One clause in the bill dealt with the effect on young life of lifting weights out of proportion to strength and another with street trading. The employment of the young for theatrical entertainments, Mr. Sorensen complained, often engendered "the Hollywood mind," which in time poisoned the child mind that they ought to possess. They became saturated with banality, vulgarity and inanity. The bill prohibits the employment of a child under 13 in any capacity and one under 16 for more than thirty-eight hours a week or eight hours in one day. Persons between 16 and 18 may not be employed for more than forty-eight hours a week. Street trading is prohibited for boys under 16 and girls under 18. Except under the protection of an entertainment license, no person under 16 may be employed at night; i. e., between 8 p. m. and 6 a. m. The age below which it is unlawful to take part in a dangerous performance is raised to 18. No person under 14 may be trained for acrobatic performances. The government announced its intention to introduce similar legislation. The adjournment of the debate on the bill was carried by 152 to 45.

A Physician Who Had Taken Drugs Charged with Drunkenness

Like all specialists, the police have a weakness for diagnosing what comes within their sphere of experience. They have much to do with alcoholism and at once diagnose it when brought in contact with any form of intoxication. They also diagnose it in certain cases of head injury attended with mental disturbance, and persons arrested for intoxication have been found dead in the cell from fracture of the skull. As mentioned at the time, a while ago a physician suffering from diabetes showed symptoms apparently due to an overdose of insulin and on police evidence, unfortunately supported by the police surgeon, was convicted of drunkenness while driving an automobile. He gave notice of appeal but died from the disease before the appeal could be heard. In the following case the defendant was more fortunate: A physician was charged at Coventry with being drunk while in charge of an automobile. A policeman stated that he saw the automobile in a ditch with the physician seated inside and his head over the steering wheel. Evidence was given by two physicians that he was suffering from the effects of alcohol. For the defense it was stated that the defendant had not been well and after seeing his patients took more than he should have done of a mixture containing bromochloral and cannabis. The physician gave evidence that he had not had any alcohol all day. Dr. J. T. J. Morrison, professor of forensic medicine, Birmingham University, said that the mixture would produce mental excitement followed by depression, and that with the latter there would be uncertainty of movement and at a certain stage the mind would be muddled. Such symptoms were familiar as the result of alcohol but few people knew them as the result of drugs. The physician was acquitted, but the bench expressed surprise that a man in his position should take drugs, knowing their effects.

Progress in Radium Therapy

The medical research council has issued a further report on the medical uses of radium. It states that in the eight years during which investigation promoted by the council has been in progress the general situation has been quite transformed. At the beginning there had been no systematic and comprehensive study in this country of the therapeutics of radium. Its clinical use was wholly empiric and the results were of doubtful value. Year by year knowledge has increased, methods have been defined and the results have improved. From being little more than a palliative measure for inoperable cases or a supplementary treatment following removal of the main growth, radium therapy has become a curative method of primary value in several types of cancer and in some instances is superseding purely surgical procedures. The national radium trust will bring radium treatment within reach of a far larger proportion of the population. There is scarcely any part of the body likely to be the seat of cancer for which some method of applying radium has not been devised. But this development does not mean that radium is of utility in every form of cancer.

PARIS

(From Our Regular Correspondent)

Nov. 27, 1929.

The Antipoliomyelitic Serum

The antipoliomyelitic serum discovered three years ago by Prof. Auguste Pettit of the Institut Pasteur de Paris has passed its probation period. It seems to effect a cure when it is employed at the onset of the disease, during the febrile period of the general infection. Its action decreases in proportion as the cicatricial lesions of the medullary tissue are formed. Frequent requests for serum are received by the Institut Pasteur from various countries of Europe and even from America. Poliomyelitis, according to the last report of the health section of the League of Nations, is assuming disquieting proportions in Sweden, Denmark, Latvia and Roumania. Unfortunately, this serum is of long and difficult preparation, and the supply of Professor Pettit is exhausted. Last summer, in France, physicians were heard eagerly inquiring of their colleagues, over the radio, whether they had any ampules of this serum. In a communication presented recently before the Academy of Medicine, Professor Pettit announced that he had succeeded in preparing a serum of equal potency by using the monkey instead of the horse. The preparation requires only five weeks in place of from four to five months. The disease is always fatal in the monkey if he is not given serum treatment. The new serum acts promptly. In a case recently treated by Drs. Brodin and Alajouanine, the retention of urine and the intestinal paralysis had entirely disappeared within twelve hours after the injection, and the muscular paralysis had retrogressed. This form of the serum will be furnished henceforth by the Institut Pasteur. Unfortunately its preparation is burdensome, since only large monkeys can be employed, which at present are expensive to purchase and difficult and expensive to take care of, since they require special cages. There is also some danger attached to their keeping. Professor Pettit adds that the same method is applicable to the preparation of the serum of other infectious diseases of the nervous system which have a filtrable or unknown

virus. Laignel-Lavastine and Koressios obtained thus encouraging results, in four cases of multiple sclerosis, by means of a hemolytic serum.

Application of Phlyctenotherapy to Drug Addicts

The Academy of Medicine heard recently a peculiar communication from Dr. Modinos, chief physician of the Hôpital européen in Alexandria. He has been using for a number of years the intramuscular reinjection of the fluid taken from a blister produced on the patient by the application of a vesicant, in the treatment of acute articular rheumatism. On using the method one day on an Arabian who was an inveterate cocaine addict, he was greatly surprised to note that the patient not only became rid of his joint pains but also lost his desire for cocaine. After three injections, he had completely lost his taste for his habitual drug. The same experiment, performed with the hope of realizing the detoxification of the patient, was applied to a morphine addict. Two injections of small doses of morphine were given in advance to tide over the transition. The patient was completely cured after receiving two injections of the blister fluid. A third case was that of a subject who was in the habit of taking heroin, hashish and up to 1 Gm. of cocaine in a single day. The first day he had violent attacks of convulsions, which it became necessary to check with chloral. After three injections, a few days apart, recovery was complete, and the patient refused cocaine that was offered to him. Modinos has collected eight observations, all similar and all conclusive, as a result of which he has been authorized by the Egyptian government to apply this method in the hospitals, asylums and prisons of Alexandria.

A Special Diploma for Surgeons

Some vigorous discussions have been held of late at the Academy of Medicine with reference to the suggestion of the president, Professor Quénu, as to the utility of creating a special diploma for surgeons, with which doctors of medicine would have to be provided in order to be authorized to perform difficult operations. Quénu complained that many physicians undertake operations requiring a special technical skill, after insufficient professional preparation, and cited instances of disasters thus occasioned that brought discredit on the medical profession as a whole. To be sure, the various examinations required of the student obtaining his doctorate in medicine include a test in operative medicine, but such a test is ordinarily confined to the ligation of an artery, a resection or an amputation on the cadaver, without any antiseptic precautions, and without hemostasis or the application of anesthetics. Even in the surgical services, the ordinary students are not allowed to perform any operation on the living, that rôle being reserved for the chief surgeon and his assistants. This preliminary training is not sufficient to entitle the holder of a diploma of doctor of medicine to attempt operations that require experience, and yet there are some who do so, tempted by the lure of the larger fees. Quénu proposes, therefore, that the right to perform such operations be reserved to those who, after taking the doctor's degree, have completed supplementary courses of study fitting them for such work, and spent a period of two or three years in a surgical service in which they had opportunities to perform operations themselves on living subjects under the surveillance of their instructors. This suggestion was not favorably received by the acadamy. Hayem complained that medicine was being split up into too many fragmentary specialties. Pinard asked how the differentiation between major and minor operations—between those that were prohibited and those that were permitted to the ordinary physician—was to be made in case of emergency. He recalled the experience of the last war, in which all physicians were called on to use their surgical knowledge in treating the wounded. In his opinion, it would suffice if the course in surgery at the faculty of medicine were made more rigorous. A committee was appointed by the Academy of Medicine to study the question. Dr. Rouvillois, professor of surgery at the Ecole du service de santé militaire, presented a paper summing up the opinions of his school. He took a stand in favor of the creation of the new diploma. According to his observations, the events of the war gave a deplorable impression. Incompetent persons assumed responsibilities beyond their range of experience and preparation, and, beginning with the second year of the campaign, it became necessary to reserve all operations, other than hemostasis and temporary immobilization of fractures, for the veritable surgeons—in the ambulances at the front and in the hospitals. At the present time, with the aid of the telephone and the automobile services, any physician can procure the aid of a surgical specialist without too long a delay, even in the midst of a campaign, if he does not wait too long before summoning such aid. Ophthalmology and otorhinolaryngology constitute, likewise, part of the usual studies of the ordinary doctor of medicine, yet nevertheless the latter does not venture into these realms without the aid of the specialist. The same applies, or should apply, to all grave operations such as those affecting the abdomen and the viscera. Rouvillois approves, therefore, the creation of a special diploma such as Quénu had recommended, to be delivered to the candidate by a special examining board composed of surgeons if found deserving after three years of preliminary training as an effective and actually practicing assistant in a surgical service. After many long and stirring discussions, the Academy of Medicine finally adopted this solution, which, however, is only a resolution and will not have any direct effect unless it is transformed into a decree by the superior council of public instruction and is finally approved by the minister of the department of public instruction.

Creation of a New Center for the National Committee for Combating Tuberculosis

The Comité national de defénse contre la tuberculose has recently established an important local branch at 66, Boulevard St. Michel, where are now located its numerous statistical and publicity services. Mr. Honnorat, formerly minister of public instruction, is chairman of the national organization, being aided in his duties by Professor Calmette and Prof. Léon Barnard. The branch is provided with ample informational material on all the existing antituberculosis societies of France: dispensaries, special services in the general hospitals, hospital-sanatoriums, sanatoriums, preventoriums, visiting matrons, open-air schools, placement of children in families in the rural districts, lecture material, films, tracts, statistics, and the like. The sum of 425,000,000 francs ($17,000,000), to be distributed over a period of four years, has been assigned in the next budget of the ministry of health for the development of these various creations, and particularly the hospital-sanatoriums, which will be experimental centers, one of which is to be established in each department of France. Mr. Doumergue, president of the republic, attended the dedicatory exercises of the new center. A delegation of Paris school children presented him the vignette of the new tuberculosis seal that is to be sold, during December, in all parts of France.

Protests Against the Exorbitant Price of Radium

The journey of Madame Curie to the United States was followed here with a high degree of interest, and every one has been profoundly touched by the hearty welcome that she received from President Hoover, the universities and the American press. The gram of radium which was solicited is destined, not for France, but for Poland, the native country of the widow of the French physicist. The press remarks, in this connection, that Madame Curie did not receive the gram of radium in kind but a check with which to buy it, and that she has again protested against the exorbitant price at which the metal is sold today. Since the discovery of the rich deposits of uranium in Katanga province of the Belgian Congo, the problem of supplying the world with radium appears solved, especially since radium is indestructible and will serve indefi-

nitely to furnish emanations and radiations. It has been reported that the factory at Oolen, in Belgium, which treats the mineral brought by the shipload from Africa, has decided to place a limit on its production, in order to prevent a decline in the price, which ranges at present between 600,000 and 800,000 francs per gram. In this connection, attention has been called to the fact that the buyers of radium have heretofore been chiefly laboratories and hospitals, and, furthermore, that the wealth thus acquired by the holders of the monopoly has had its source in the public and private benevolences with which the laboratories and the hospitals are supported. If radium were sold at the much lower prices that its present actual value indicates, now that the mineral from which it is derived has been found in abundant quantities, a supply would be available not only in a few large institutions richly endowed by philanthropists but in all the hospitals and laboratories of the world. The speculative profits realized by the holders of the radium monopoly are, therefore, viewed here with severe disfavor, for the reason that they are obtained at the expense of human suffering, disease and death. It has even been suggested by some that a petition be addressed to the health council of the League of Nations, requesting it to intervene in the matter. In addressing the Académie des sciences recently, Professor Matignon formulated an urgent protest on the subject. As for Madame Curie, her laboratory possesses only the radium given by Dr. Henri de Rothschild. Not to be obliged to resort to begging in order to obtain radium for the Institut du cancer, she decided to resist the demands of the radium monopoly and to manufacture radium herself. The city of Paris has granted her a plot of ground and the sum of 1,500,000 francs ($60,000), for the installation of her factory, and the government has allowed her a large subsidy. She hopes, in this way, to be able to serve the cause of humanity by thus helping to lower the price of radium.

BUCHAREST

(From Our Regular Correspondent)

Dec. 6, 1929.

The Value of the Rapid Test Method of Diagnosing Rabies

A case illustrating the value of what is known as the rapid method of diagnosing rabies has just been officially reported at Cluj, the capital of Transylvania. A stray dog bit five people in and about that city, August 8. The dog was captured at once and the cervical ganglion was removed and submitted to the "rapid test," and from the results obtained the persons who were bitten were advised to take preventive treatment at the Pasteur Institute of Cluj. One person refused to accept treatment and in due time he complained of pain in the bite, extending up along the arm. Rabbits that were inoculated with material from the dog died of rabies. The patient was then again urged to accept treatment but he refused, and on October 4 he began to exhibit the usual symptoms of rabies and died, October 8. The cervical ganglion and a portion of the medulla which was removed from this man at the postmortem examination showed the characteristic changes, and portions inoculated into rabbits caused paralytic phenomena and death in sixteen days. Four different observers inoculated animals with this medulla, and all secured the same results. The rapid test has thus been shown to be of value, and it is important to remember that the probable prognosis was arrived at from an examination of the cervical ganglion of the suspected dog.

Mushroom Poisoning

At a recent meeting of the Cluj Medical Society, the city medical officer read notes on eight cases of mushroom poisoning from the eating of *Agaricus torméntosus*. The victims (two children, four men and two women) all suffered from severe gastro-enteritis. The first symptoms were general malaise; then followed ringing in the ears, a general feeling of depression, burning in the stomach and bowels, thirst, vomiting, diarrhea, cramps in the legs, general weakness, mydriasis with pupillary reflexes intact, anuria, coma, Cheyne-Stokes respiration, thready pulse, irregular cardiac action, and death. In all of the cases perspiration was suppressed, while great quantities of indican were present in the urine. The postmortem examination confirmed the desiccated condition of the body surface and the mucous membranes, which were all quite dry. The intestine was much reddened and covered in many places with petechiae. The heart, liver and kidneys showed evidence of beginning fatty degeneration. The treatment consisted of the administration of tannin in some of the cases and atropine in others, but without any success. Prophylactic measures should be taken by teaching country people to recognize the different varieties of mushrooms and their properties. Cooking is important in this connection, as the toxin is coagulated by heat and thus becomes innocuous. An added protection would be to cook them in fresh milk.

A Campaign Against Malaria

The public health authorities of Roumania have determined to eliminate malaria from the drainage regions of the Dobrudja. Active prophylactic measures were taken against the disease during the summer and autumn, and are to be continued. Stations for observation and experimentation have been instituted in different villages along the Danube. Prophylactic experiments are being conducted in the marshy areas.

International League Against Trachoma

During the twelfth International Ophthalmological Congress, I. Van der Hoeve, president of the congress, and E. Marx, secretary, called a meeting at which the representatives of the following states and cities were present: Van der Hoeve, Leyden; Jitta and F. Wibaut, Amsterdam; Angelucci and V. Rossi, Naples; Lutrario, Rome; Emile de Grosz, Budapest; Auerbach, Moscow; F. Avizonis, Lithuania; F. H. Beaumont, New Zealand; Birch-Hirschfeld, Königsberg; Coppez, Brussels; A. Feigenbaum, Jerusalem; Gray Clegg, Manchester; Hamburg, Roumania; Hanke, Vienna; F. Humbert and Morax, Paris; Imre, Pécs; Lundsgaard, Copenhagen; Lussich-Matkovic, Zagreb; Marquez, Madrid; M. Nakashima and S. Myashita, Japan; J. Park Lewis, Buffalo; Walter R. Parker, Detroit; C. Pascheff, Sofia; Pavia, Buenos Aires; Soria, Barcelona; Symansky, Warsaw; Charles Weiss, United States; W. H. Wilder, Chicago; R. E. Wright, Madras; M. Zachert, Poland. The spread of trachoma and the necessity of the campaign against it was set forth in an exhaustive report by Lutrario and Jitta, delegates of the Comité d'hygiène of the League of Nations. It was resolved to form an international league, in accordance with the motion of Van der Hoeve. Dr. Emile de Grosz, professor of ophthalmology at the University of Budapest, was appointed president, and Dr. F. Wibaut, secretary. They were entrusted with the formation of a committee from among the delegates of the ophthalmic societies and leagues already existing. The president was authorized to communicate with the Comité d'hygiène of the League of Nations and the Rockefeller Foundation to endeavor to enlist their aid in the movement.

Injurious Effect of Smoke in the Atmosphere of Large Cities

Dr. J. Sándor recently discussed in Oradea the hygienic objection to an excess of smoke. He believes that the injurious effects of excessive quantities of smoke in the atmosphere are due to the various properties of smoke. The bad effects are not entirely due to the coal dust or soot in the smoke. Investigation has shown that the material deposited by smoke consists partly of carbon and partly of other substances, including phenol, tar products and acids. In soot deposits 9 per cent of sulphuric acid and 7 per cent of hydrochloric acid have been found.

Chimney gases, free from smoke, also contain these acids. The acids that would ordinarily escape into the air condense on the particles of soot, and as these fall they are brought into the stratum of air that serves for respiration. The action of the soot is not limited solely to the area polluted by smoke. With good stoking, most of these products are completely consumed. The products of combustion, the tar products and the acids are the substances that have the most injurious effects on the respiratory passages. Smoky atmospheres may cause catarrhs, and may prevent or delay convalescence from nasal and respiratory disorders.

The smoke penetrates around closed windows and doors, and its bad effects are not confined to those outdoors. Imperfect combustion leads to the formation of carbon monoxide, and this was shown to be present in an atmosphere heavily charged with smoke. Smoke is often the cause of town fogs, which have different characteristics from country fogs. The town fog is injurious to all plants; the country fog is harmless and easily dispersed. Fogs in the large cities are increasing in proportion to the increased consumption of coal, and when a fog comes on there is a concentration of all the harmful substances. In winter months especially they shut out the sunshine and thus interfere with general health conditions.

Puncture Wound of the Diaphragm and Spleen

Dr. Schmidt of Targulmures showed a case of puncture wound of the diaphragm and spleen in a woman, aged 23, who had been stabbed with a knife. There was copious hemorrhage, and when she was admitted into the hospital she was in a state of collapse and her respirations were rapid and shallow. The wound was in the tenth intercostal space in the left axillary line. Pneumothorax was present on the left side. When the edges of the wound were separated, a hole was seen in the diaphragm. The wound was plugged with gauze. The next morning the temperature was 38.6 C. (101.5 F.) and the abdominal wall was tense. Operation was considered to be justifiable. The tenth rib was resected, and it was seen that the knife had passed through the left lung, through the diaphragm and into the spleen. The spleen was first sutured, then the diaphragm and a part of the wall of the chest, the remainder being kept open for drainage. The patient recovered.

BERLIN

(From Our Regular Correspondent)

Nov. 29, 1929.

Meeting of the Society for Diseases of Metabolism and of the Gastro-Intestinal Tract

(Concluded from page 2042, volume 93)

THE SURGICAL TREATMENT OF CARDIOSPASM

Professor Payr of Leipzig delivered a communication on the surgical treatment of cardiospasm. The indications for the surgical interventions in cardiospasm, which are, in part, of an extensive nature and present technical difficulties, require the keenest judgment and much experience, as the patients are frequently frankly psychopathic. Surgical intervention is to be considered only in case internal dilation treatment of the cardia has failed. It is indicated if the patient is rapidly losing weight and faces death from starvation. The patients that come to operation are usually poor surgical risks. A distinction is made between emergency and radical operations. In the most serious cases, gastrostomy is the only method left by which nourishment may be given. From the gastric fistula as the point of departure, it may be possible later to institute supplementary measures. The radical procedures are: (1) forced distention of the cardia by way of the widely opened stomach, with the fingers or with instruments, after the Mikulicz method; (2) cardioplastic measures, and (3) cardiomyotomy, after the Heller method, without injury of the mucous membrane. Cardiomyotomy is, in point of practice, the simplest method and vies with the method of forced distention. Operations on the vagus nerve have thus far been complete failures. In considering the results of surgical intervention, it may be noted that the radical operations are not sure of success, failures resulting either because the musculature of the distended and lengthened esophagus is so weakened that it no longer aids actively in the onward movement of the food, or because cramp conditions again develop at the cardia or just above it. Also scar formations at the site of the operation may prevent a successful outcome. Absence of discomfort and healing are by no means synonymous. The various methods bring lasting results, with complete absence of discomfort following the ingestion of food, in from 70 to 91 per cent of the cases. There is no procedure that is free from danger, and none in which success is absolutely assured. By means of thorough examinations (esophagoscopy, roentgen rays) it must be established which special type of the disorder obtains, following which it must be decided what intervention is indicated. The decision can sometimes not be reached until after the abdominal cavity has been opened. The abdominal is preferable to the transpleural operation. The mortality, even with the most approved methods, ranges between 6 and 7 per cent.

NEWER ASPECTS OF LIVER DISORDERS, FROM MEDICAL AND SURGICAL POINTS OF VIEW

Prof. P. F. Richter of Berlin presented the official paper on the "Newer Aspects of Liver Disorders." He explained how the study of the abnormal carbohydrate metabolism of the liver had thrown new light on the parenchymatous disorders of that organ. A knowledge of the bond that unites the vast number of well known partial functions of the liver is still lacking. There is scarcely another organ in which regenerative and degenerative processes take place in such close proximity to one another. Clinically, the liver is especially important for supplying the organism with carbohydrates. Lack of carbohydrates injures not only the organism but the liver itself. The liver suffers an autolytic breakdown when it is deprived of carbohydrates. The glycogen constitutes thus the protection against the complete breakdown of the liver activity. It increases the capacity and vitality of the liver cell. In monkeys infected with yellow fever, the first symptom was the glycogen impoverishment of the liver cells. The attack on the glycogen supply is an early symptom. The liver with an even slightly damaged parenchyma has not the glycogen supply of the healthy liver. There is, therefore, an absolutely certain causal connection between liver injury and glycogen impoverishment. The cell that is robbed of its glycogen is disturbed in its functioning. That is proved, for instance, by the increase of liver disorders during the recent war. Associated with glycogen impoverishment, the tolerance for galactosis is reduced; the tolerance rises with the increase of the glycogen supply of the liver. Impairment and improvement of the liver function are thus closely connected with the synthesis and decomposition of glycogen. Thus, the treatment includes the task of supporting the function of the liver by the ingestion of glycogen. In parenchymatous injuries, the ingestion of carbohydrates alone is, however, not sufficient; simultaneously, the synthesis of glycogen and its fixation in the liver must be brought about through the administration of insulin. On the basis of this knowledge, Richter makes certain inductions with reference to pathogenesis, diagnosis, prognosis and treatment of parenchymatous liver disorders. Viewed pathogenically, there is a straight line leading from the simple parenchymatous icterus to the grave breakdown of the liver—it is only a matter of gradual differences. The principal domains for the insulin-sugar therapy are the subacute and the chronic cases of icterus. Richter recommends relatively small doses of insulin (from 10 to 20 units, twice a day) with the ingestion of as much carbohydrate as can be assimilated.

CIRRHOSIS

In his paper, Professor von Bergmann of Berlin, in dealing with the problem of cirrhosis, took as his point of departure a comparison between the cirrhosis conception of Sternberg-Eppinger, dating from the year 1925, with the classification of Rössle of recent date—the epithelial injury and the epithelial regeneration are not always primary and the inflammatory proliferation of the connective tissue secondary. Processes may originate in the mesenchyma—in portions of the reticulo-endothelial apparatus, and, secondarily, the gitter cells may choke the epithelium. In a fully developed process, hepatosis and hepatitis exist side by side. A causal classification according to the noxae (for instance, alcohol) is impossible. Not even biliary cirrhosis, so far as it has its origin in epithelial defects, can be sharply distinguished from the hypertrophic and the atrophic cirrhoses, or the mixed types. The clinical histories show how frequently conditions exist that represent many different phases and transitions which cannot be classed under cirrhosis (precirrhoses, cholangeitis, icterus simplex, and the like). Of the numerous more or less useful tests for liver functioning, information in regard to diffuse liver injuries can be obtained by means of the blood sugar-epinephrine curve (Kugelmann), the acetone body observations (especially beta-oxybutyric acid in icterus simplex), and particularly the Bergmann-Eilbott bilirubin test. The last mentioned test is positive in all cirrhoses, but often also in chronic alcoholism and temporarily in acute alcoholic intoxication. Very frequently one notes a positive reaction in cholecystopathies with liver involvement; furthermore, in highly febrile infections, and also in exophthalmic goiter. The test often shows, however, without any increase of the spontaneous bilirubin level, the continuance of a latent liver injury, so that this conception must be extended beyond its usual limits, since formerly it was accepted only when, without icterus, there was a high bilirubin level. In addition to alcohol, the toxicity of infection is a reliable indication of a liver injury; this applies also to body waste products (abacterial), particularly in the case of a liver poor in glycogen. To sum up, it may be said that the clinical and the anatomic aspects must be considered together in making the classification. The "course," however, compels the recognition of many phases or gradual transitions—reversible and irreversible liver injuries. The manifest disease pictures (icterus simplex, cholangeitis, subacute atrophy of the liver, infection injuries, and the like) assume a latent condition, and, with or without recurrences, unless their latency is stationary, take on the form of acute or chronic liver disorders, even after many years—often of "secondary hepatocirrhoses" of the most various types. This fluid aspect, together with the recognition of distinguishing factors, has led to a sort of unitarian point of view such as has been held by Eppinger for many years, which has the support of numerous recent observations.

LIVER TUMORS AND CYSTS

In the third paper, the Berlin surgeon Prof. R. Mühsam brought out that surgery had made progress in the treatment of liver tumors and cysts. Even extensive resections (for instance, of the right lobe of the liver) have been carried out successfully. Gallbladder disorders are combined, in the early stages, with inflammatory changes of the liver tissue. Icterus is, in many cases, the expression of these liver changes. Persistent icterus brings the danger of cholemic hemorrhage. If stone obstruction is suspected, an early operation should be performed. Postoperative icterus, such as may appear after operations on cholemic patients, with or without stone obstruction, and also the postoperative icterus occasioned by the anesthetic, may be favorably influenced by insulin and dextrose. Likewise, insulin-dextrose therapy is the sovereign remedy in the treatment of postoperative acidosis and acetonuria. The tests of liver functioning and roentgen-ray examination are important aids in the diagnosis of liver disorders. To what extent the indications and the prognosis are affected by the tests of liver functioning must be determined by further researches.

The next session of the society will be held in Budapest in 1930, under the chairmanship of von Korányi.

LENINGRAD

(From Our Regular Correspondent)

Nov. 24, 1929.

Survey of the Medical Literature of the Current Year

(Concluded from page 1667, volume 93)

On the basis of experiments on rabbits and guinea-pigs, Professor Astanin and M. Plotnikoff have been able to demonstrate that, by means of a constant current, antibodies can be introduced through the undamaged skin. After the injection of an otherwise fatal dose of diphtheria toxin, a constant current of from 15 to 30 milliamperes was passed into the experimental animals through bandages dipped in antidiphtheritic serum, for from twenty to thirty minutes, on four successive days. All the animals treated in this manner recovered, whereas the controls succumbed. It was further established that the antitoxin is introduced through the skin of the animal only from the anode, and that the healing effect does not depend on the site of application or on the place chosen for the introduction of the toxin. Diphtheria toxin showed in vitro, under the influence of the galvanic current, a perceptible decrease in its toxic potency.

LESIONS OF THE MOTOR APPARATUS AND THE SKELETAL SYSTEM

According to Professor Brussilowsky, lesions of the motor apparatus and of the skeletal system of nontuberculous origin are among the most important in the statistics of disease and resulting incapacity for work. The health resorts in the Union of the Socialist Soviet Republics are not in a position to meet the demands made on them, which fact makes it necessary to seek out new therapeutic paths by which the healing action of natural factors may be supported and furthered. The author uses in his clinical station at the health resort combinations of balneotherapeutic measures with nonspecific and specific protein therapy and various forms of physical therapy. According to the author, this combination method should always find application in order to increase the number of patients treated in the health resorts.

TREATMENT OF MALARIA

W. Taboloff proposed a new method of treatment for malaria. It is well known that quinine, under certain forms of administration, produces hypoglycemia, an exceedingly troublesome manifestation for the organism. In order to prevent such an occurrence, the author proposes a combination of quinine with epinephrine and glycerin, which produces leukocytoses and controls the solubility and absorption of the quinine. On the basis of a series of case histories, the author showed the excellent results of the application of quinine and glycerin in a number of cases in which pure quinine therapy was ineffective.

THE EFFECTS OF VARIOUS FATS ON THE GASTRIC SECRETORY FUNCTIONS

W. Ssokolowski discussed the effects in patients with stomach disorders of various fats on the gastric secretory functions. The secretion of gastric juice is diminished by the fats, the effect being observed not only in connection with doses administered through a tube but also in the case of swallowing the fat directly. The hampering effect of the fats is increased in the presence of subjective sluggishness of the patient toward the fat concerned. About the same effect was observed in experiments with butter, except that, as a result of taste associations, the gastric secretion may be found to have an increased hydrochloric acid content. For that reason the author is

inclined, in the mechanism of the gastric secretion, to assign great influence to the psychic factor. Hence, it is imperative that the existing dietaries be modified to suit the individual.

CLASSIFICATION OF SPERM GROUPS

W. Krainskaja-Ipatowa reported his progress in the study of the classification of sperm groups, which he undertook simultaneously with the determination of the iso-agglutination properties of the blood. He sums up as follows the results of his investigations: (1) The sperm presents the same group characteristics that are peculiar to the blood of a given individual, and (2) similar group characteristics may be observed also in sperm spots, which fact has medicolegal importance.

EFFECTS OF OXYGEN ADMINISTRATION ON DIABETIC PATIENTS

C. Wainstein was able to show, in the treatment of patients with diabetes, that, following the deep inspiration of oxygen, the specific gravity of the urine drops, the glycosuria and the glycemia decrease, and the unpleasant and severe subjective expressions of itching, thirst, and the like, become less marked. Since, with the inspiration of oxygen, the oxidation processes are increased, the diabetic patients so treated can better endure an increased calory intake. The author thinks that, if worked out further, the method, by reason of its ready availability, might become exceedingly useful.

EFFECTS OF GASTRIC ACIDITY AND VARIOUS DISORDERS ON THE NORMAL BLOOD ALKALI RESERVE

Wolodin and Belajeff's researches go to show that neither the acidity of the gastric contents nor the various disease types can change the normal blood alkali reserve figures, which fact testifies to the stability of the regulatory mechanism of the acid-base equilibrium. If this is disturbed, it is usually on the acid side. In such cases, the vegetative nervous system gives evidence of parasympathetic shifting.

IMPOSSIBILITY OF DETERMINING ENLARGEMENT OF LYMPH GLANDS OF THE HILUM BY PERCUSSION

In order to settle the question as to the possibility of diagnosing by percussion an enlargement of the lymph glands of the hilum of the lung, the authors made special researches on cadavers. An agar solution colored with fuchsin was injected into the hilum. An attempt was made to determine the site of the injected solution by percussion, and the percussion finding was tested, by dissection, as to its accuracy. The results proved conclusively that it is impossible to diagnose an enlargement of the bronchial glands by percussion.

General Items

At various points on the southern coast of the Crimea, children's sanatoriums are being established. The former Dülbère palace is being transformed into a sanatorium for tuberculous children.

In the Leningrad Stomatologic Institute, a department for researches on the occupational diseases and the occupational injuries of the mouth and teeth has been created. It is the intention of the department to subject the workmen of the glass and the lead industries to a special investigation.

According to the reports of the public health service, the morbidity from tuberculosis is steadily declining. In Leningrad the mortality from tuberculosis is 24.1 per 10,000 of population, as against 38.2 during the period from 1904 to 1908. In Moscow the mortality is 15.8, as compared with 34.5 in 1900. In Leningrad, fewer persons die from tuberculosis than in Paris; in Moscow, fewer than in Vienna and Prague.

In Sebastopol, Crimea, an institute for research work in methods of physical therapy is being planned.

The excess of births over deaths in Russia in 1925 was 21 per thousand. In 1926 it was 23.4 per thousand.

Marriages

HOWARD M. FREAS, Banza Manteke, Congo Belge, W. C., Africa, to Miss Adelaide Katherine Shumway of Bryn Mawr, Pa., Nov. 30, 1929.

ARNOLD M. LANDSBOROUGH, Garrettsville, Ohio, to Miss Anna D. Smylie of Mangum, Okla., at Ashtabula, Ohio, Dec. 9, 1929.

CESAREO DE ASIS, Worcester, Mass., to DR. SARAH MU JIN CHING of Washington, D. C., Nov. 20, 1929.

FOREST M. HOUSER, Cherryville, N. C., to Miss Blanche Duey at Quincy, Pa., Nov. 25, 1929.

ROMUALD O. OSTROWSKI, Hammond, Ind., to Miss Mary Korman, Nov. 21, 1929.

JOSEPH K. NARAT, Chicago, to Miss Mitzi Loose of Los Angeles, recently.

Deaths

Charles Henry Schmidt, Chicago; University of Illinois College of Medicine, Chicago, 1905; member of the Illinois State Medical Society; formerly instructor in medicine at his alma mater; on the staff of the Norwegian-American Hospital; quarantine officer and inspector of the Chicago Health Department; aged 48; died, Nov. 28, 1929, of cerebral hemorrhage.

John Monahan Doyle, St. Joseph, Mo.; Ensworth Medical College, St. Joseph, 1897; member of the Missouri State Medical Association and the American College of Surgeons; formerly county coroner; past president of the Buchanan County Medical Society; aged 55; died, Nov. 7, 1929, of osteogenic sarcoma of the right humerus with widespread metastases.

Lee M. Willard ⊕ Wausau, Wis.; College of Physicians and Surgeons, Chicago, 1891; member of the American Medical Academy of Ophthalmology and Oto-Laryngology and the American College of Surgeons; on the staffs of St. Mary's and the Wausau Memorial hospitals; aged 61; died, Nov. 14, 1929, at a hospital in Cleveland.

Charles Sumner Chase, Iowa City, Iowa; Rush Medical College, Chicago, 1882; member of the Iowa State Medical Association; emeritus professor of materia medica, State University of Iowa College of Medicine; past president of the Johnson County Medical Society; aged 76; died, Nov. 27, 1929, of cerebral hemorrhage.

Herbert Hayes Judd, Oakland, Calif.; Chicago Homeopathic Medical College, 1904; Hahnemann Medical College and Hospital, Chicago, 1908; past president of the Montana State Board of Medical Examiners and the Gallatin (Mont.) County Medical Society; aged 51; died, in November, 1929, at Stockton, of pneumonia.

John Wilson White, Flippin, Ky.; Medical Department, University of Tennessee, Nashville, 1900; member of the Kentucky State Medical Association; served during the World War; aged 62; died, Nov. 19, 1929, at U. S. Marine Hospital number 11, Louisville, of chronic nephritis and chronic myocarditis.

Walter C. Bennett ⊕ Mount Gilead, Ohio; University of Wooster Medical Department, 1877; president of the Morrow County Medical Society; formerly county probate judge; at one time member of the board of education of Iberia; aged 76; died in December, 1929, at the Mount Carmel Hospital, Columbus.

Robert Elmore Looney ⊕ Nashville, Tenn.; University of Nashville Medical Department, 1902; member of the Oklahoma State Medical Association; associate professor of obstetrics, University of Oklahoma School of Medicine; on the staff of the Davidson County Hospital; aged 52; died, Dec. 10, 1929.

Lester Colwell Miller ⊕ Worcester, Mass.; Harvard University Medical School, Boston, 1895; vice president of the Massachusetts Medical Society; member of the New England Pediatric Society; formerly on the staff of the Memorial Hospital; aged 62; died, Nov. 7, 1929, of heart disease.

Harold Edwards Carney, Monroe, La.; Tufts College Medical School, Boston, 1916; member of the Louisiana State Medical Society; on the staff of the Riverside Sanitarium; aged 41; was killed, Nov. 6, 1929, when the automobile in which he was driving was struck by a train.

⊕ Indicates "Fellow" of the American Medical Association.

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John Harvey Johnson ✠ Brookhaven, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1888; served during the World War; on the staff of the King's Daughters' Hospital; aged 63; died, Nov. 20, 1929, of chronic myocarditis and arteriosclerosis.

Francis Alfred Hare, Washington, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1919; member of the Medical Society of the State of Pennsylvania; on the staff of the Washington Hospital; aged 36; died suddenly, in November, 1929, of heart disease.

Ira Augustus Nelson, Northport, Wash.; University of Nashville (Tenn.) Medical Department, 1902; veteran of the Spanish-American and World wars; medical director of the Northport Hospital; aged 56; died, Oct. 28, 1929, in a hospital at Colville, of heart disease.

Charles Lindol French, Clinton, Mass.; Medical Department of Columbia College, New York, 1869; member of the Massachusetts Medical Society; formerly on the staff of the Clinton Hospital; aged 84; died, Nov. 18, 1929, at St. Petersburg, Fla., of pneumonia.

Charles Loring Anderson, Kansas City, Mo.; Missouri Eclectic Medical College, Kansas City, 1898; College of Physicians and Surgeons, Kansas City, Kan., 1900; Kansas City Homeopathic Medical College, 1901; aged 61; died, Dec. 6, 1929, of lobar pneumonia.

Michael Campbell ✠ Nashville, Tenn.; University of Nashville Medical Department, 1874; member of the American Psychiatric Association; superintendent of the Eastern Hospital for the Insane, Knoxville, 1886-1916; aged 85; died, Oct. 30, 1929, of pneumonia.

Olaf T. Sherping ✠ Fergus Falls, Minn.; Keokuk Medical College, 1894; member of the American College of Surgeons; formerly member of the state board of health; chief of staff of St. Luke's Hospital, 1902-1928; aged 65; died, Dec. 7, 1929, of heart disease.

Cornelius Fitzgerald Buckley, San Francisco; L.R.C.S., L.R.C.P., Edinburgh, Scotland, 1864; one of the founders of the Mary's Help Hospital and formerly member of the board of directors; aged 86; died, Nov. 29, 1929, of myocarditis and arteriosclerosis.

George Welch Wimberly ✠ Toppenish, Wash.; Medical Department of Columbian University, Washington, D. C., 1902; served during the World War; aged 54; died, Oct. 26, 1929, of cerebral hemorrhage, chronic nephritis and arteriosclerosis.

Dora Brooks Smoot ✠ Washington, Ind.; Medical College of Indiana, Indianapolis, 1892; past president of the Daviess County Medical Society; on the staff of the Daviess County Hospital; aged 67; died, Dec. 2, 1929, of gastric ulcer.

John Henry Holley, Samson, Ala., Medical Department of the University of Alabama, Mobile, 1898; member of the Medical Association of the State of Alabama; aged 64; died, Nov. 19, 1929, in a hospital at Dothan, of cerebral hemorrhage.

John Frederick B. Weaver, Manchester, Md.; University of Maryland School of Medicine, Baltimore, 1864; member of the Medical and Chirurgical Faculty of Maryland; aged 88; died, Oct. 29, 1929, of carcinoma of the parotid gland.

Carl Williamson McGaughey, Washington, D. C.; Medical College of Indiana, Indianapolis, 1904; medical supervisor of the U. S. Veterans' Bureau; aged 49; died, Nov. 24, 1929, near Richmond, Va., of pneumonia and heart disease.

Samuel K. Pfaltzgraff ✠ York, Pa.; University of Maryland School of Medicine, Baltimore, 1886; formerly county coroner, member of the city board of health, and school board; aged 65; died, Nov. 22, 1929, of heart disease.

Harold W. Anderson, Kansas City, Mo.; University of Kansas School of Medicine, Kansas City, 1928; aged 27; on the staff of the Bell Memorial Hospital, Kansas City, Kan., where he died, Dec. 15, 1929, of pneumonia.

Bernard Allen Jenkin ✠ Wilmington, Del.; College of Physicians and Surgeons, Baltimore, 1909; served during the World War; formerly on the staff of the Wilmington General Hospital; aged 44; died, Oct. 23, 1929.

Willet Scott Lanning, Plainfield, N. J.; Hahnemann Medical College and Hospital, Chicago, 1888; aged 72; died, Nov. 22, 1929, in the Muhlenberg Hospital, of a skull fracture received when struck by an automobile.

Chilles Wade Cain ✠ Somerset, Ky.; University of Louisville School of Medicine, 1890; bank president; medical superintendent of the Somerset General Hospital; aged 62; died, Nov. 19, 1929, of pneumonia.

Robert E. Lee, Wardensville, W. Va.; College of Physicians and Surgeons, Baltimore, 1892; member of the West Virginia State Medical Association; aged 62; died, Nov. 28, 1929, of carcinoma of the stomach.

Arthur Fulkerson Toole, Asheville, N. C.; University of Virginia Department of Medicine, Charlottesville, 1900; member of the Medical Society of the State of North Carolina; aged 52; died, Nov. 4, 1929.

John J. Aeberly, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1895; member of the Illinois State Medical Society; aged 72; died, Dec. 1, 1929, of a skull fracture received in a fall.

Alexander S. George, Richmond, Va.; Medical College of Virginia, Richmond, 1876; formerly assistant professor of surgery at his alma mater; aged 84; died, Nov. 1, 1929, of nephritis and myocarditis.

Thomas Williams Stephens, Pittsburgh; Hahnemann Medical College and Hospital of Philadelphia, 1893; aged 59; died, Nov. 7, 1929, at the Homeopathic Hospital, of perforated gastric ulcer and peritonitis.

Thomas Gayle Connell, La Grange, Ky.; Hospital College of Medicine, Louisville, 1904; member of the Kentucky State Medical Association; formerly county coroner; aged 50; died, Nov. 28, 1929.

Maria Levin Lipkin, Chicago; Charkovsky Universitet, Kharkov, Russia, 1916; aged 35; died, Dec. 5, 1929, at the Illinois Research and Educational Hospital, of acute yellow atrophy of the liver.

Thomas Patton Shaw, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1893; formerly demonstrator and lecturer of physiology at his alma mater; aged 57; died recently.

Ancel C. Sherrard, Oakwood, Ohio; Medical Department of the University of Wooster, Cleveland, 1884; member of the Ohio State Medical Association; aged 72; died, Nov. 26, 1929, of arteriosclerosis.

Frank Canfield Hollister ✠ New York; Bellevue Hospital Medical College, New York, 1890; on the staff of the Good Samaritan Hospital, Suffern; aged 62; died, Nov. 30, 1929, of heart disease.

William Charles Yates, Pacific Grove, Calif.; Eclectic Medical Institute, Cincinnati, 1887; member of the California Medical Association; aged 64; died, Sept. 15, 1929, of cerebral hemorrhage.

Ira B. Bright, Greenwood, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1890; aged 69; died, Nov. 15, 1929, at Rochester, Minn., of carcinoma of the pancreas.

John M. Wampler ✠ Richmond, Ind.; Miami Medical College, Cincinnati, 1894; formerly on the staff of the Reid Memorial Hospital; aged 74; died, Oct. 30, 1929, of chronic myocarditis.

Oscar Howard Dunton ✠ Circleville, Ohio; Rush Medical College, Chicago, 1893; for eighteen years county coroner; aged 71; died, Nov. 23, 1929, at the Grant Hospital, Columbus, of uremia.

John David Jones ✠ Utica, N. Y.; Medical Department of the University of the City of New York, 1884; formerly on the staff of the Utica General Hospital; aged 71; died, Sept. 19, 1929.

David D. Brucar ✠ New York; Universitatea din Iassi Facultatea de Medicina, Bucharest, Roumania, 1898; aged 56; died, Nov. 15, 1929, of diabetes mellitus and pulmonary embolus.

William Seymour White ✠ Evanston, Ill.; Chicago Homeopathic Medical College, 1888; veteran of the Spanish-American War; aged 65; died, Nov. 26, 1929, of heart disease.

Clyde Chisholm Ratcliff, St. Louis; University of Tennessee College of Medicine, Memphis, 1928; intern, St. Louis City Hospital; aged 24; died, Nov. 8, 1929, of pneumonia.

Alfonse F. Kalkhoff, Milwaukee; Rush Medical College, Chicago, 1876; Civil War veteran; aged 79; died in December, 1929, of injuries received when he was struck by a truck.

Benjamin F. Senftenberg, Hewlett, N. Y.; Baltimore University School of Medicine, 1899; aged 52; died, Nov. 20, 1929, at the Bellevue Hospital, New York, of typhoid.

Bryce Rex Winbigler ✠ Rock Island, Ill.; University of Illinois College of Medicine, Chicago, 1904; on the staff of St. Anthony's Hospital; aged 51; died, Nov. 20, 1929.

Martha Alice McBride, Zanesville, Ohio; Cleveland University of Medicine and Surgery, 1897; aged 69; died, Oct. 23, 1929, at Jackson Center, Pa., of cerebral hemorrhage.

Walter Rembert Thompson, Moss Point, Miss.; University of Louisville (Ky.) School of Medicine, 1891; formerly justice of the peace; aged 79; died, Nov. 13, 1929.

John William Hatcher, Franklin, Tenn.; Vanderbilt University School of Medicine, Nashville, 1877; also a minister; aged 74; died, Nov. 22, 1929, of heart disease.

Jonathan C. Hardesty, Newcastle, Ind.; Medical College of Indiana, Indianapolis, 1880; formerly president of the local board of health; aged 80; died, Nov. 22, 1929.

Mathew W. Jewett, Ivanhoe, Va.; Baltimore Medical College, 1883; member of the Medical Society of Virginia; Confederate veteran; aged 80; died, Nov. 12, 1929.

John Morgan Huddleston, Waco, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1885; aged 65; died, recently, of acute dilatation of the heart.

Benjamin F. Walker, Jonesboro, Ark.; Memphis (Tenn.) Hospital Medical College, 1903; member of the Arkansas Medical Society; aged 60; died, Nov. 16, 1929.

George W. Stansbury, Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1883; aged 81; died, Oct. 30, 1929, of chronic myocarditis.

Caroline Marie MacDermott Cassidy, Brooklyn; College of Physicians and Surgeons, Boston, 1890; aged 69; died, Nov. 23, 1929, at St. John's Hospital.

Joseph Anderson Goodwin ✠ Jasper, Ala.; Medical College of Alabama, Mobile, 1874; on the staff of the Walker County Hospital; died, Oct. 23, 1929.

Andrew Louie West, St. Joseph, Mich.; Vanderbilt University School of Medicine, Nashville, Tenn., 1916; health officer; aged 38; died, Nov. 26, 1929.

Jacob Homer Schneider, Cleveland; Cleveland Homeopathic Medical College, 1898; aged 53; died, Nov. 22, 1929, of prostatic abscess and septicemia.

Charles Carter Cranmer, Pasadena, Calif.; University of Birmingham Faculty of Medicine, Birmingham, England, 1866; aged 90; died, Nov. 17, 1929.

Samuel Justus Harris ✠ Philpot, Ky.; University of Louisville (Ky.) School of Medicine, 1872; Civil War veteran; aged 87; died, Nov. 29, 1929.

Hubbert Samuel Phillips, Dunmore, Pa.; Hahnemann Medical College of Philadelphia, 1884; aged 85; died, Oct. 30, 1929, of chronic myocarditis.

W. F. Coker, Lincoln, Ala. (licensed, Alabama, 1887); for many years member of the county board of education; aged 72; died, Nov. 18, 1929.

William H. Hoar, Grahamsville, N. Y.; Medical Department of the University of the City of New York, 1881; aged 72; died, Nov. 27, 1929.

Stephen S. Ludlum, Mason, Mich.; University of Michigan Medical School, Ann Arbor, 1884; aged 66; died, Dec. 4, 1929, of angina pectoris.

Scott Logan Mitcham, South Bend, Ind.; Meharry Medical College, Nashville, Tenn., 1900; aged 54; died, Nov. 14, 1929, of heart disease.

Adoniram J. Farrell, Hallettsville, Texas; College of Physicians and Surgeons, Baltimore, 1883; aged 72; died, in November, 1929, at Gonzales.

Lewis Baker, Dayton, Ohio; Hospital College of Medicine, Louisville, 1898; aged 75; died, Nov. 7, 1929, of carcinoma of the urinary bladder.

Allen T. Rice, Beatrice, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1881; Civil War veteran; aged 94; died, Nov. 17, 1929.

Walter Ingold Pitts ✠ Lenoir, N. C.; University of the South Medical Department, Sewanee, Tenn., 1903; aged 50; died, Nov. 19, 1929.

Simon S. Koser, Williamsport, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1873; aged 77; died in November, 1929.

Howard B. Lyons, Miamisburg, Ohio; Eclectic Medical Institute, Cincinnati, 1877; aged 73; died, Nov. 23, 1929, of heart disease.

Albert J. Patterson, Grand Rapids, Mich.; Detroit Medical College, 1883; aged 70; died, in November, 1929, of cerebral hemorrhage.

Robert C. Johnston, Laurel, Miss. (licensed, Mississippi, 1901); Confederate veteran; aged 82; died, Nov. 21, 1929, of heart disease.

John Ransom Hamill, Kansas City, Mo.; Rush Medical College, Chicago, 1887; aged 65; died, Nov. 19, 1929, of heart disease.

A. D. Felder, Magnolia, Miss.; Louisville (Ky.) Medical College, 1885; aged 68; died, Oct. 25, 1929, of chronic nephritis.

Bureau of Investigation

MORE MISBRANDED NOSTRUMS

Abstracts of Notices of Judgment Issued by the Food, Drug and Insecticide Administration of the United States Department of Agriculture

Yumco Tablets.—The Yum Products Corporation of Brooklyn, N. Y., shipped to Pennsylvania in January, 1929, a quantity of Yumco that was declared misbranded. The Yumco Tablets were found to contain sodium salicylate, acetphenetidin (phenacetin), baking soda, phenolphthalein, a trace of alkaloids and a laxative plant drug extractive. The claims made for the preparation to the effect that the tablets would cure influenza were declared false and fraudulent and in May, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16361; Issued November, 1929.*]

Kelp-O-Lite.—The Pacific Kelp Products Company, Inc., Portland, Oregon, shipped to Seattle in December, 1928, and January and February, 1929, a quantity of Kelp-O-Lite, which was declared misbranded. The product was found to consist essentially of aluminum sulphate and water, with traces of calcium, iron, potassium and sodium compounds, benzoic acid and chlorides. The curative claims made for the preparation, to the effect that it was a remedy for rheumatism, sore eyes, deafness, tonsillitis, pyorrhea, piles, etc., were declared false and fraudulent. In April, 1929, the Pacific Kelp Products Company, Inc., having appeared as claimants, judgment of condemnation was entered and the court ordered that the product be released to the company on filing a bond, conditioned in part that the stuff should not be resold or disposed of in violation of the federal Food and Drugs Act.—[*Notice of Judgment 16368; Issued November, 1929.*]

Dakol Nasal Cream.—The New Haven Laboratories, Inc., New Haven, Conn., shipped in January, 1929, to New York a quantity of Dakol Nasal Cream, which was declared misbranded. The article was found to consist essentially of petrolatum, with one-fourth of 1 per cent of chloramine-T, volatile oils including menthol and a small amount of saponifiable fat. The preparation was declared adulterated because it was labeled an antiseptic, which it was not. The curative claims, to the effect that it was a remedy for influenza, bronchitis, whooping cough, asthma, etc., were declared false and fraudulent. In May, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16371; Issued November, 1929.*]

Sun and Moon Sacred Ointment and Sacred Herb Oil.—A. W. Lowrie, Inc., of Hartford, Conn., shipped in February, 1929, from Connecticut to Massachusetts a quantity of Sun and Moon Sacred Ointment and Sun and Moon Sacred Herb Oil. When analyzed by the federal chemists, the ointment was found to consist essentially of a petrolatum and fatty acid base, with oils of sassafras, spearmint and wintergreen, while the herb oil consisted essentially of olive oil with oils of sassafras, spearmint and wintergreen. The ointment was claimed to be a cure for influenza, catarrh, neuritis, rheumatism, piles, hardening of the arteries and various other conditions, while the oil was sold as a remedy for rheumatism, neuritis, stiff joints, backache, etc. The various claims were declared false and fraudulent and in March, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the products be destroyed.—[*Notice of Judgment 16367; Issued November, 1929.*]

[The Sun and Moon Ointment and Oil were analyzed in the A. M. A. Chemical Laboratory in 1924 and the results published in THE JOURNAL, Aug. 9, 1924. Alfred W. Lowrie was an alleged divine healer who claimed to have received the formulas for his nostrums from the Supreme Being after he had died and gone to heaven. When he returned to earth he began marketing his oil and ointment. The ointment, according to analyses, seems to have been largely composed of axle-grease and suet—a rather mundane mixture from such a celestial source.]

Flumonia (Fuming) Salve.—The Van Vleet-Mansfield Drug Company, Memphis, Tenn., shipped to Louisiana in June, 1928, a quantity of Flumonia (Fuming) Salve that was declared misbranded. The product was found to consist of a petroleum jelly containing small amounts of menthol, camphor and oil of eucalyptus. The therapeutic claims made for the preparation, to the effect that it was a remedy for pneumonia, whooping cough, asthma, influenza, etc., were declared false and fraudulent, and in March, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed. —[*Notice of Judgment 16375; Issued November, 1929.*]

Mentho-Squillo.—The Mansfield Drug Company of Baton Rouge, La., shipped in December, 1928, to Mississippi a quantity of Mentho-Squillo, which was declared misbranded. The product was found to consist essentially of acetic acid, spirits of niter, menthol, a trace of red pepper, sugar, alcohol (6.8 per cent) and water. The curative claims, to the effect that the product was a remedy for influenza, coughs, croup, tonsillitis, asthma, etc., were declared false and fraudulent. The preparation was further declared misbranded in that it failed to bear on the label the quantity of alcohol contained, and in May, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16365; Issued November, 1929.*]

Chek-a-Cold Tablets.—The Continental Drug Corporation, Alton, Ill., shipped in January, 1929, to Oklahoma a quantity of Chek-a-Cold Tablets, which were declared misbranded. When analyzed, the federal chemists found the tablets to consist essentially of acetanilid, red pepper and aloes. The product was declared misbranded, first, because the amount of acetanilid present was incorrectly stated on the label, and, second, because the therapeutic claims, that it was an effective treatment for influenza and grip, were false and fraudulent. In May, 1929, a decree was entered, adjudging the product adulterated and misbranded. The court ordered that the product might be released to the owners on payment of the costs and the execution of a bond and the filing of a certificate by the owners that the product had been honestly relabeled and reconditioned.—[*Notice of Judgment 16374; Issued November, 1929.*]

U-Rub-It.—The U-Rub-It Chemical Company of Newark, Del., shipped in February, 1929, to Pennsylvania a quantity of U-Rub-It, which the federal authorities declared was misbranded. Analysis showed the preparation to be an ointment consisting essentially of petrolatum and beeswax, with oils of eucalyptus, peppermint and sassafras, with menthol, oil of wintergreen and capsicum. The claims made for the preparation were declared false and fraudulent and in May, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16363; Issued November, 1929.*]

Obstetrics and the General Practitioner.—The problems of the general practitioner are many and there is no specific remedy. We are burdened with charity patients and professional dead-beats; the former we should care for as much as our time and finances will permit; for the latter, we should as a body refuse to work. The practitioner should not hesitate to take the responsibility of treating any case which he knows he is competent to treat. He should take more time and be thorough in his examinations, and charge his patients for services rendered. Obstetrics is the hardest branch of medicine. The general practitioner is often unexpectedly called upon to do major obstetrical surgical work alone under the most adverse circumstances. In the daytime we are busy and at night we are tired. It is probable that obstetrical work causes more gray hairs in his head than any other one thing, and, without a doubt, it is one of the primary causes of so many of us going to an early grave. We should require cash for these cases; this being one time the husband is forewarned for nine months, he should be forearmed with the cash. I hope the day is not far distant when we will have an obstetrical hospital in every county in North Carolina. This is one branch of medicine that truly belongs to the specialist, and I wish him God's blessing.—McGehee, J. W.: The Problems of a General Practitioner, *South. Med. & Surg.*, December, 1929.

Correspondence

"SO-CALLED FATAL ANAPHYLAXIS IN MAN"

To the Editor:—Comment on several points contained in the commendable article by Dr. R. W. Lamson on "So-Called Fatal Anaphylaxis in Man" (THE JOURNAL, Dec. 7, 1929) appears to be in order. Constitutional reactions are the *bêtes noires* of every allergist.

An important phase of the production of such general reactions is the entrance into the system of the hypersensitive individual of an amount of allergen which exceeds his particular tolerance at that moment. Quite probably a severe general reaction, resulting even in death, could be produced in many hypersensitive persons if a *sufficient* quantity of specifically active allergen reached the general circulation. It is doubtful whether this primary conception of the matter will be materially altered by the discovery of the actual mechanism of the general reaction. Consequently, there is but one way of preventing these reactions and that is by exercising the requisite care that an excess of allergen is not introduced into the system. What constitutes an excess of allergen is always difficult to determine. Experiment and observation, however, have established certain facts which serve as guides of safe procedure.

The intradermal test is virtually a parenteral injection; it is, therefore, far more delicate than the scratch or dermal test. To the physician who is accustomed to making skin tests with powdered allergens or whole pollen by the scratch method an intradermal test, made with a 1:50 or 1:500 dilution, may seem to be a safe procedure. That is not the case, however, and there is little doubt that such a practice, if employed as a routine, will produce numerous general reactions.

In case 2 described by Lamson, "the patient was tested intradermally with various pollen extracts in a 1:50 dilution and with several dried pollens by the ophthalmic method." Intradermal tests were also made with 1:500 dilution of several epidermals and a number of foods. About two or three minutes after the test injection of buckwheat extract (1:500) a severe constitutional reaction developed and "death ensued five minutes after the onset of symptoms." The comment of the physician in whose practice this regrettable fatality occurred was, "The lesson suggested by this case is the danger of the intradermal method even in comparatively weak dilutions without preliminary cutaneous tests."

The question arises, Are 1:50 pollen extracts and 1:500 epidermal and food extracts "comparatively weak dilutions?" The answer to this question is to be found in the correlative query, "What is the practice of those who sponsor the intradermal method of testing and whose observation and experience have served to perfect the method?"

Pollen extracts prepared according to Coca's method and standardized by the nitrogen content are tested in cases of suspected hay-fever in concentrations of 0.0001 and 0.001 mg. of nitrogen per cubic centimeter. Stronger solutions are used if these tests are negative or doubtful. Computed in terms of volume concentration, this means that 0.02 cc. of a 1:167,000 and 1:16,700 dilution is used in routine testing in the case of high ragweed; 1:133,000 and 1:13,300 for low ragweed, and 1:100,000 and 1:10,000 for timothy. A 1:50 dilution of high ragweed pollen is equivalent to a solution containing 0.35 mg. of nitrogen per cubic centimeter—a concentration which is never used for testing by those sufficiently experienced with the intradermal method.

Limitation of space permits the mention of the usual concentrations of only a few other allergens: dog epithelium, 1:1,400; horse epithelium, 1:7,000; cottonseed, 1:57,500; buckwheat, 1:17,500. Cottonseed and buckwheat extracts are used in these great dilutions because experience has shown that these particu-

lar allergens are capable of producing very severe reactions. It is interesting to note that the first report in the literature of a severe reaction almost terminating in death, following a test for hypersensitiveness, is that due to a scratch test with buckwheat.

Patient 1 of Lamson's report died within a few minutes after the subcutaneous treatment-injection of an extract of Bermuda grass pollen. The most plausible explanation of this untoward reaction is that it was due to an overdose of allergen. From the incomplete data given, the following dosage schedule has been constructed: If the first dose, 0.05 cc., 1 : 10,000, is taken as a unit (i. e., the amount of active substance in 1/200,000 Gm. of pollen) the following successive unit dosages most probably were given (the italicized figures are dosages which I have interpolated):

June 27					July 9	10				19	20	21
1,	*4,*	*6,*	*8,*	*10,*	*12,*	*14,*	*20,*	*30,*	*40,*	*50,*	*60,*	80,	200,	100

It will be observed that fifteen injections were given in twenty-four days and that the doses were increased very gradually until the 14th, when an increment of 120 units is recorded. The patient reported that "he had been somewhat nervous after the treatment and that he was unable to sleep as well as usual." It is reasonable to assume that he was then on the verge of a general reaction, for on the following day a 100 unit injection precipitated the fatal outcome. Had the increase in dose been attained by a more gradual rise (by increasing the earlier doses) the patient's tolerance would most likely not have been overstepped.

Not enough stress has been placed on this important phase of the allergy problem, particularly in the literature of the manufacturers who purvey allergens. A surgeon is not made by the mere purchase of a more or less complete surgical equipment; so, too, an allergist is not made by merely acquiring a set of allergens.

I agree with Lamson that there may be other explanations for these fatalities which do not imply any specific effect on the part of the allergens injected. To those, however, who have witnessed a number of severe constitutional reactions induced by the injection of known allergens—reactions of such intensity that the feeling is engendered that if they were just a little more severe death would most likely ensue—the theory that regards these reactions as an expression of a specific hypersensitive state is difficult to displace. Moreover, confirmatory evidence is to be found in the fact that during the past twelve years the number of general reactions has been markedly decreased in the experience of most allergists chiefly because an increasing amount of attention has been given to the problem of the individual patient's tolerance with regard to the strength both of test solutions and of therapeutic injections.

AUGUST A. THOMMEN, M.D., New York.
Director, Allergy Clinic, University and
Bellevue Hospital Medical College.

To the Editor:—Commenting on Dr. R. W. Lamson's article on "So-Called Fatal Anaphylaxis in Man" (THE JOURNAL, December 7), I believe that one should always look for additional causes besides the injected serum. Dr. Lamson suggests that physical agents such as cold, heat or pressure may be responsible for the fatal results. He did not discuss the possibility that specific irritants usually causing asthma may be among the predisposing factors as well.

One of my hay-fever patients sustained an unusually severe shock following an injection of ragweed. He was sensitive to cantaloupe, shell-fish, watermelon and both ragweeds. This injection was his eleventh and was only half the amount stronger than the last one, which was administered three days previously without ill effect. The patient completely collapsed but rallied after a tourniquet had been applied on the arm (Cooke) and multiple small injections (Duke) of epinephrine, one intracardially, had been made.

Later, on questioning I found out that he had eaten shell-fish about two hours before visiting me that day. It is likely that this was the cause of the severe and nearly fatal reaction. This is also of interest in the light of Walzer's work on the absorption of unsplit proteins in the gastro-intestinal tract.

The detecting of a multiple sensitiveness will undoubtedly clarify some of the mysteries connected with this problem.

GEORGE L. WALDBOTT, M.D., Detroit.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CARBON MONOXIDE IN BLOOD

To the Editor:—How long does an appreciable amount of carbon monoxide remain in the blood following exposure to a sufficient concentration to cause prolonged unconsciousness? The specific instance is this: A man was found unconscious in a pump house. The doors were closed, and the gas engine of the pump was running. The exhaust of the engine was run through a pipe to the exterior, but there was a possibility of a leak into the pump house. Following his removal from the pump house, the man remained unconscious or semiconscious and irrational. He developed within three days indefinite thoracic signs, with high temperature and leukocytosis. On the fifth day, chemical examination showed high blood sugar (250 mg.) and urea (60 mg.). There was no sugar in the urine, however. On the sixth day blood was obtained for carbon monoxide determination. The tests used were Hawk's ferricyanide-acetic acid test, and the ammonium sulphide-acetic acid test. The results on both were negative. A few hours later the man died. An autopsy was obtained, and the anatomic diagnosis was bronchopneumonia, right empyema, and miliary abscesses of the kidneys. If the primary cause of these trains of symptoms and observations was carbon monoxide poisoning, should or should not the tests for monoxide, taken on the sixth day following the supposed exposure, have been positive? Please omit name.

M.D., New York.

ANSWER.—All the details of this case are compatible with the possibility that the man was overcome by carbon monoxide. Long before the time of his death on the sixth day following the supposed exposure, all of the carbon monoxide would have diffused out of his blood. Even on the day following the gassing, it is doubtful whether carbon monoxide could have been identified in the blood. The process of elimination is exactly similar to that of absorption. An asphyxiation, sufficient to induce the symptoms described and death some days later, usually develops from the absorption through an hour or more of an amount of carbon monoxide sufficient to produce from 60 to 70 per cent saturation. If the saturation reaches from 80 to 90 per cent, death may occur before the patient is found. If it has reached only 60 or 70 per cent and the patient remains untreated, the elimination goes on slowly for ten or twelve hours, by which time it is practically complete. But during the earlier hours of this period the tissues, and particularly the brain, are still subject to a deprivation of oxygen nearly as severe as during the time the victim was inhaling the gas. The object of the modern treatment for carbon monoxide asphyxia is to abbreviate this period as much as possible. For this reason carbon dioxide is administered with oxygen; and the respiration, which for the first few hours after asphyxiation is much depressed, is thus stimulated. The breathing of the large volume of oxygen, with which the carbon dioxide is mixed, is thus effective in eliminating carbon monoxide.

POSSIBLE DANGERS OF ALUMINUM IN DRINKING WATER

To the Editor:—I have been discussing the use of chlorine as a water purifier of our aqueduct in this city. After the beneficial effect of chlorine for this purpose had been proved, the public health authorities ordered the chlorinization of our modern aqueduct. The water of the Magdalena River, which is used in our aqueduct for drinking water, is muddy and has vegetal wastes in it; thus, it is necessary to sterilize it by means of alum. In *La Clinica* is an item by Dr. Francisco Valiente in which he quotes Dr. G. Schmidt as saying that 90 per cent of the American population is poisoned with aluminum. Will you please furnish me with precise data on this subject. Please omit name and address. M.D.

ANSWER.—There has been considerable difficulty in some countries in the introduction of water filtration because of the prevailing feeling that the alum used is poisonous to the water consumer. There does not seem to be sufficient scientific evidence to justify belief in such a danger.

In order to treat water successfully with alum (aluminum sulphate is the compound ordinarily used) it is necessary to have a certain amount of alkali present. If the natural alkalinity

of the water is insufficient, some must be added. Soda ash is commonly used, but in some filter plants calcium carbonate has proved better. As a result of action of weak alkali on the aluminum sulphate a precipitate of aluminum hydroxide is formed and this collects in flocks which adsorb suspended matter, including bacteria and color, from the water. The water containing the alum flock is passed through a coagulating and settling basin for a period of about six hours. Approximately 50 per cent of the aluminum settles out in this basin. The remainder is removed from the water on so-called rapid filters. The amounts of alum added vary from 0.1 grain to 2 grains per gallon of water. On chemical grounds it is difficult to conceive of any appreciable amount of alum passing through the filter plant if the plant is properly operated. Indeed, the process of purification would not be satisfactory if the conditions were such as to allow this to happen.

As to the effect of chlorine, it is pretty well established that the amounts of chlorine in drinking water as consumed are altogether too small to have any physiologic action.

TREATMENT OF PERSISTENT INFECTION IN URETHRA

To the Editor:—Kindly discuss the diagnosis, treatment and prognosis of the following case: A male patient had gonorrhea four years ago for which condition he had been receiving treatment in a local hospital. The hospital finally pronounced him cured and discharged him. The urine, nevertheless, never cleared up completely. It has been all the time somewhat cloudy, especially the first glass, in which there are also found a few shreds here and there. The patient tells me that in the mornings, on arising, he can express pus from the urethra. Smears taken from the urethra and prostate on numerous occasions show only numerous pus cells but no organisms. I have been treating this patient for nearly six months now, the treatment consisting of potassium permanganate through injections, prostatic massages, sounds and deep instillations. I do not notice any improvement at all. The pus in the urine persists. Kindly omit name.

M.D., Canada.

ANSWER.—Instances of the kind referred to may be due to "overtreatment." It is a good plan to desist for about two weeks from any local treatment and watch for the result. In case the pus should not disappear, prolonged irrigations (not injections) with an astringent solution such as 1 : 5,000 potassium permanganate or 0.5 per cent zinc sulphate should furnish relief.

TREATMENT OF PERSISTENT PRURITUS AT MENOPAUSE

To the Editor:—Could you advise me on the following case as regards treatment and diagnosis: A woman, aged 54, developed a pruritus of the upper portion of the arms on the extensor surfaces, also over the outer surfaces of the hips and the abdomen. She describes the condition as a tingling and crawling sensation with itching. It comes on especially when the patient is disrobing or changing the clothes; also after taking a bath. The trouble has been present for about seven years. Cholecystectomy was performed five years ago, and amputation of cervix four years ago. The menopause occurred at the age of 46. The systolic blood pressure is 148; diastolic, 82. The skin over the forearms and hips seems to be much cooler than in other parts of body. The skin is firm, not dry, and there is no evidence of any dermatitis; the patient is slightly obese. Examination shows no palpable masses of the abdomen and no deviation from the normal. Would parathyroid, thyroid and ovarian extract be indicated in this condition? Local remedies, such as calamine lotion, alcohol and wet towels, aggravate the condition. Kindly omit name and location.

M.D., Wisconsin.

ANSWER.—It is assumed that examinations for possible malaria, tuberculosis, diabetes and leukemia have been made with negative results. From the date of onset of this pruritus it seems reasonable to infer that it is a persisting symptom of the menopause. The careful use of thyroid and ovarian extracts is indicated. Parathyroid can be added, if wished. From the fact that the itching comes on after the bath, it would seem likely that an ointment, such as 12 per cent boric acid in ointment of rose water, would be the most helpful local agent. To this phenol up to 1 per cent, menthol, camphor-chloral or other antipruritics can be added if needed.

HAIR TURNING RED AFTER PERMANENT WAVE

To the Editor:—I have a syphilitic patient who had a course of mercury bismuth salicylate and sulpharsphenamine during the three months prior to July 15, 1929. She appeared at my office about two weeks ago and was started on bismuth salicylate, 1 grain (0.065 Gm.), intramuscularly every two or three days. After the third treatment she had a permanent wave. Wherever the instrument touched her hair, the hair turned red. Naturally it was black and gray. Could her antisyphilitic treatment have had anything to do with this change? Kindly omit my name.

M.D., Iowa.

ANSWER.—We can see no possible association between the use of bismuth subsalicylate or the sulpharsphenamine that this patient had taken and the turning red of her hair where it was touched by the instruments in making a permanent wave. Had the woman used resorcinol or some of its derivatives as a hair tonic, that might have caused it. Usually when the hair is seen turning yellow or reddish unexpectedly it is from that.

PHENYLHYDRAZINE HYDROCHLORIDE IN POLYCYTHEMIA

To the Editor:—I see in Queries and Minor Notes ("Polycythemia with Epileptiform Attacks," THE JOURNAL, November 9) that the treatment recommended for polycythemia with epileptiform attacks does not include phenylhydrazine hydrochloride. Do you consider this drug contraindicated because of the epileptiform attacks?

M.D., California.

ANSWER.—The omission of phenylhydrazine hydrochloride was an oversight. It should have been mentioned with benzene, with the warning that it should always be discontinued before the red count reaches 5,000,000; and the cases should be carefully chosen. It should not be used when there is any suspicion of renal or hepatic disease, or when the general condition is not good.

"COD LIVER OIL OR VIOSTEROL (IRRADIATED ERGOSTEROL) FOR NURSING MOTHER"

To the Editor:—Recently I read in Queries and Minor Notes (THE JOURNAL, November 16, p. 1582) a question and answer regarding the relative value of cod liver oil and viosterol (irradiated ergosterol) as prophylactic agents to be supplied to expectant or nursing mothers and infants. The inquiry involved the alleged advantage of viosterol over cod liver oil. The answer pointed out that: "Some of the chief objectionable features of cod liver oil are odor, taste and varied potency; viosterol is odorless and virtually tasteless and is therefore more easily given. Its potency may be raised or lowered and is standardized so that it may be given in drop doses containing amounts of vitamin D comparable to teaspoonful doses of cod liver oil."

Are there not other potencies in cod liver oil that deserve consideration?

M.D., Connecticut.

ANSWER.—Our correspondent will note, in reading the questions and answers carefully, that the item under direct consideration was evidently vitamin D, though it was not so specifically referred to in the query. We are glad, however, to take occasion to stress the fact that cod liver oil and viosterol solutions are by no means to be regarded as therapeutically equivalent or that cod liver oil can be replaced by the newer irradiated products except so far as the antirachitic factor vitamin D is concerned. Cod liver oil is also a carrier of the indispensable vitamin A, the specific rôle of which is not yet so clearly established though it is assuredly an essential component of an adequate diet. Overdosage of vitamin A has never been recorded. Furthermore, cod liver oil contains digestible and assimilable fats. A tablespoonful yields approximately 100 calories, the equivalent of a pat of butter or a slice of bread in food-fuel value.

It should also be noted that cod liver oil supplemented with viosterol, and thus fortified with additional vitamin D, has become available for therapeutic use (see THE JOURNAL, Aug. 31, 1929, p. 693). Concentrates containing both vitamins A and D as supplied by the nonsaponifiable residues from cod liver oil are also being marketed.

Recently the public press and even some magazines devoted to the popularization of science have carried accounts of the alleged new production of "Synthetic cod liver oil," referring to irradiated oils or solutions of viosterol. Obviously the latter contain only vitamin D and in no sense deserve the appellation "cod liver oil." The implications are unfortunate and have misled many persons into error in discarding cod liver oil, one of the rich sources of vitamin A.

USE OF BARBITAL DERIVATIVES

To the Editor:—I have been flooded with so much literature and so many names of different barbituric acid preparations that I am now confused as to what to use. I will greatly appreciate it if you will advise me as to what preparations are suitable as a preliminary sedative to local anesthesia in nose and throat operations, the amount to use and the time of administration. Also what to use in case of symptoms of cocaine poisoning.

HARVEY B. SEARCY, M.D., Tuscaloosa, Ala.

ANSWER.—On the whole, most of the barbiturates on the market act much alike, just as the bromides of the various alkali metals act alike. An important exception to this general proposition is phenobarbital, which is much more effective and toxic than are most of the other barbital derivatives on the market. Phenobarbital in a dose of 0.2 Gm. is probably best given by mouth in capsule thirty minutes before the operation. In the presence of symptoms of cocaine intoxication, 0.2 Gm. of phenobarbital sodium dissolved in sterile physiologic solution of sodium chloride may be given hypodermically if the symptoms are mild, or intravenously if severe. The dose may be cautiously repeated, if required.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

COLORADO: Denver, Jan. 7, 1930. Sec., Dr. W. W. Williams, 224 State Capitol Bldg., Denver, Colo.

CONNECTICUT: New Haven, Feb. 8, 1930. State Board of Healing Arts, 1895 Yale Station, New Haven, Conn.

DISTRICT OF COLUMBIA: Washington, Jan. 13, 1930. Health Officer, Dr. W. C. Fowler, District Bldg., Washington, D. C.

MINNESOTA: Minneapolis, Jan. 7-8, 1930. Basic Science. Sec., Dr. E. T. Bell, 110 Anatomy Bldg., Minneapolis, Minn.

NATIONAL BOARD: Parts I and II: Feb. 12-14, 1930. In all centers where there are five or more candidates. Part III: Chicago, Jan. 7-10, 1930. New York City, Jan. 13-15, 1930. Dir., Mr. E. S. Elwood, 225 South Fifteenth St., Philadelphia, Pa.

NEW YORK: New York City, Albany, Syracuse, Buffalo, Jan. 27-30, 1930. Chief, Mr. H. J. Hamilton, Educational Bldg., Albany, N. Y.

NORTH DAKOTA: Grand Forks, Jan. 7-10, 1930. Sec., Dr. G. M. Williamson, Grand Forks, N. D.

OREGON: Portland, Jan. 7-9, 1930. Sec., Dr. Joseph F. Wood, 510 Selling Bldg., Portland, Ore.

PENNSYLVANIA: Philadelphia, Jan. 7-11, 1930. Bedside examination last two days in various Philadelphia hospitals. Dir., Dr. D. C. Koch, Harrisburg, Pa.

PHILIPPINE ISLANDS: Manila, Feb. 11, 1930. Sec., Dr. Jose V. Glorin, 341 Ronquillo Station, Cruz, Manila, P. I.

SOUTH DAKOTA: Huron, Jan. 21-22, 1930. Dir., Dr. H. R. Kenaston, Bonesteel, S. D.

VERMONT: Burlington, Feb. 11-13, 1930. Sec., Dr. W. Scott Nay, Underhill, Vt.

WASHINGTON: Seattle, Jan. 9-10, 1930. Basic Science. Regular, Jan. 13-14, 1930. Dir., Mr. Charles Maybury, Olympia, Wash.

Texas June Examination

Dr. T. J. Crowe, secretary of the Board of Medical Examiners of the State of Texas, reports the written examination held at Austin, June 18-20, 1929. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. One hundred and thirty-five candidates were examined and passed. One hundred and twenty-one physicians were licensed through reciprocity with other states. The following colleges were represented:

College	PASSED Year Grad.	Per Cent
Howard University School of Medicine	(1928)	77.1
Rush Medical College	(1927)	87.9
University of Illinois College of Medicine	(1929)	84.1
Tulane University School of Medicine	(1928) 87.7, (1929)	88.4
Johns Hopkins University School of Medicine	(1926)	89.8
Columbia University College of Phys. and Surgs.	(1929)	85.8
University of Oklahoma School of Medicine	(1929)	80.8
Jefferson Medical College	(1927) 89.4, (1929) 87.1, 89.9	
University of Pennsylvania School of Medicine	(1927)	88.2
Meharry Medical College	(1926) 81, (1929) 82.4, 83.3	
Baylor University College of Medicine	(1929)	79.3,
80.2, 80.7, 80.7, 81.7, 82.3, 82.5, 82.6, 83.3, 83.5, 83.6, 84.3, 84.9, 85, 85.1, 85.1, 85.2, 85.2, 85.5, 85.6, 85.6, 85.6, 85.8, 86.3, 86.3, 86.5, 86.6, 86.8, 86.9, 87.2, 87.4, 87.5, 87.6, 87.6, 87.6, 87.7, 87.8, 88.1, 88.3, 88.3, 88.3, 88.5, 88.5, 88.6, 88.6, 88.7, 88.9, 89, 89, 89.3, 89.4, 89.8, 89.9, 89.9, 90.8, 91.1, 92		
University of Texas School of Medicine	(1929)	80.8,
83.4, 84, 85.5, 85.6, 86.7, 86.9, 87.2, 87.2, 87.3, 87.4, 87.4, 87.6, 87.7, 87.8, 87.9, 88, 88.2, 88.2, 88.3, 88.4, 88.5, 88.6, 88.7, 88.7, 89.1, 89.1, 89.2, 89.2, 89.3, 89.3, 89.3, 89.5, 89.5, 89.8, 89.8, 89.9, 90.1, 90.3, 90.3, 90.3, 90.5, 90.8, 91.3, 91.3, 91.6, 92.1, 92.8		
Free School of Homeopathic Medicine, Mexico	(1922)	*81.6
National University of Mexico Faculty of Medicine	(1909) (1923) *86.7, (1924) *87.2, (1928) *88.5	*84.9,
School of Medicine and Pharmacy, Guadalajara	(1923)	*89.4
University of Naples Faculty of Medicine	(1922)	*81.3
Osteopaths	77.6, 79.6, 81.1, 83.4, 83.6, 86.5, 88, 90	

College	LICENSED BY RECIPROCITY Year Grad.	Reciprocity with
University of Alabama School of Medicine	(1907)	Alabama
College of Physicians and Surgeons, Little Rock	(1911)	Oklahoma
Univ. of Arkansas School of Med.	(1926) (1927) (1928) (2)	Arkansas
College of Medical Evangelists	(1927)	Maine
Denver College of Medicine	(1901)	Colorado
University of Colorado School of Medicine	(1925)	Colorado
Howard University School of Medicine	(1928)	Dist. Colum.
Atlanta College of Physicians and Surgeons	(1902) (1907)	Georgia
Emory School of Medicine	(1925)	Alabama
University of Georgia School of Medicine	(1928)	Georgia
Bennett Medical College	(1915)	Illinois
Loyola University School of Medicine	(1916) (1918) (1925)	Illinois
Northwestern University Medical School	(1922)	Illinois
Rush Med. College	(1916) (1921) (1925)	Illinois, (1902) (2) Wisconsin
Univ. of Illinois Coll. of Med.	(1912) (1915)	Illinois, (1893) Minnesota
Central College of Phys. and Surgs., Indianapolis	(1898)	Indiana
University of Indiana School of Medicine	(1921)	Indiana
Kentucky School of Medicine	(1886)	Kansas, (1908) Louisiana
Tulane University School of Medicine	(1912) (1916) (1920) (1924) (1926) (3) (1927) (2) (1928) (2)	Mississippi Louisiana
Johns Hopkins University School of Medicine	(1926) (1923) (1925) (1926) (1927)	Mass. Maryland
Maryland Medical College	(1913)	Porto Rico
University of Maryland School of Medicine	(1909)	N. Carolina
University of Minnesota Medical Coll.	(1902) (1918) (1922)	Minnesota
Missouri Medical College	(1899)	Oklahoma
National Univ. of Arts & Sciences Med. Dept.	(1897) (1910)	Missouri
St. Louis University School of Med.	(1910) (1911) (1928)	Missouri
Washington University School of Medicine	(1925)	Florida
Creighton Univ. Sch. of Med.	(1913) (1916) Nebraska, (1919)	Kansas
Cleveland College of Physicians and Surgeons	(1896)	Ohio
Eclectic Medical College, Cincinnati	(1925)	Arkansas
Medical College of Ohio School of Medicine	(1907)	Kentucky
Miami Medical College, Cincinnati	(1905) (1907)	Ohio
University of Oklahoma School of Medicine	(1921)	Oklahoma
University of Oregon Medical School	(1928)	Missouri
Medico-Chirurgical Coll. of Philadelphia	(1909) (1911) (1913)	Penna.
Jefferson Medical College	(1891)	Penna.
University of Pennsylvania School of Medicine	(1913) (1925) Mississippi	Penna.
Meharry Medical College	(1926) Tennessee, (1927)	Louisiana
Memphis Hospital Medical College	(1902) (1913)	Mississippi
University of Tennessee College of Medicine	(1928) (1916) (1927) (1928) (4) Tennessee, (1925) Mississippi	Arkansas
Vanderbilt University School of Medicine	(1902) (1892) (1925) Arkansas	Colorado
University of Vermont College of Medicine	(1928)	Vermont
Medical College of Virginia	(1898) (1925)	Virginia
University of Virginia Department of Medicine	(1925)	Mississippi
Milwaukee Medical College	(1906)	Wisconsin
University of Dublin Faculty of Medicine	(1913)*	Mass.
Charles University Faculty of Medicine, Prague	(1927)	Kansas
Kanazawa Medical College	(1909)*	California
Osteopaths	(15) Missouri, (1) Iowa, (3) Pennsylvania (2) Minnesota, (1) Ohio, (1) Illinois	

*Verification of graduation in process.

Montana April and October Examinations

Dr. S. A. Cooney, secretary of the Board of Medical Examiners of the State of Montana, reports the written examinations held at Helena, April 1 and 2 and Oct. 1 and 2, 1929. The examinations covered 10 subjects and included 100 questions each. An average of 75 per cent was required to pass. Nine candidates were examined and passed. Nine physicians were licensed through reciprocity with other states. The following colleges were represented:

College	PASSED Year Grad.	Per Cent
Northwestern University Medical School	(1929)	86.8
State University of Iowa College of Medicine	(1928)	88.7
University of Minnesota Medical School	(1928) 80, 82.2,	82.9
Creighton University School of Medicine	(1929)	84.8
University of Nebraska College of Medicine	(1929)	83.5
Jefferson Medical College	(1924)	84.2
University of Toronto Faculty of Medicine	(1923)	85.8

College	LICENSED BY RECIPROCITY Year Grad.	Reciprocity with
University of Maryland School of Medicine	(1925)	Maryland
University of Minnesota Medical School	(1929)	Minnesota
St. Louis University School of Medicine	(1920)	S. Dakota
Creighton University School of Med.	(1924) (2), (1927) (2)	Nebraska
Albany Medical College	(1904)	W. Virginia
Starling Medical College	(1889)	Wyoming

Pennsylvania July Examination

Mr. C. D. Koch, director of the Professional Education Bureau of the State of Pennsylvania, reports the written and practical examination held at Philadelphia and Pittsburgh, July 9-13, 1929. Three hundred and forty-four candidates were examined, 341 of whom passed and 3 failed. Twenty physicians were licensed through reciprocity with other states and 4 by endorsement of credentials. The following colleges were represented:

College	PASSED Year Grad.	Number
Stanford University School of Medicine	(1929)	1
Yale University School of Medicine	(1928)	1
Columbian College Medical Department	(1892)	1
Georgetown University School of Medicine	(1928)	10
George Washington University Medical School	(1928)	1
Howard University School of Medicine	(1928)	2
Loyola University School of Medicine	(1929)	1
Indiana University School of Medicine	(1928)	3
University of Louisville School of Medicine	(1927)	1
Tulane University School of Medicine	(1928)	1
Johns Hopkins University School of Medicine	(1928)	2
University of Maryland School of Medicine	(1928)	1
Boston University School of Medicine	(1915) 1, (1928)	1
Harvard University Medical School	(1927) 1, (1928)	1
Tufts College Medical School	(1927) 1, (1928)	1
University of Michigan Medical School	(1928)	1
University of Minnesota Medical School	(1928) 2, (1929)	1
American Medical College	(1911)	1
St. Louis University School of Medicine	(1928)	3
University of Nebraska College of Medicine	(1926) 1, (1928)	2
Syracuse University College of Medicine	(1927)	1
University of Buffalo School of Medicine	(1927)	1
Eclectic Medical College of Cincinnati	(1928)	1
Ohio State University College of Medicine	(1928)	1
University of Cincinnati College of Medicine	(1929)	2
Western Reserve University School of Medicine	(1928)	3
University of Oklahoma School of Medicine	(1928)	1
Hahnemann Med. College and Hosp. of Philadelphia	(1928)	33

Jefferson Med. College	(1924) 1, (1926) 3, (1927) 22, (1928)	55
Temple University School of Medicine	(1927) 1, (1928)	34
Univ. of Penna. Sch. of Med.	(1924) 1, (1927) 16, (1928)	44
University of Pittsburgh School of Medicine	(1928)	53
Woman's Medical College	(1925) 1, (1927) 1, (1928)	5
Meharry Medical College	(1928)	4
Medical College of Virginia	(1928)	3
Vanderbilt University School of Medicine	(1928)	1
University of Vermont College of Medicine	(1927)	1
University of Texas School of Medicine	(1927)	1
McGill University Faculty of Medicine	(1928)	1
University of Toronto Faculty of Medicine	(1928)	2
Donskey University Faculty of Medicine	(1919)*	1
University of Budapest Faculty of Medicine	(1920)*	1
German University of Prague Faculty of Medicine	(1926)*	1
University of Lemberg Faculty of Medicine	(1925)*	1
Charles University Faculty of Medicine of Prague	(1921)	1

FAILED

College	Year Grad.	Number
Western Pennsylvania Medical College	(1901)	1
Meharry Medical College	(1928)	1
University of Modena Faculty of Medicine	(1925)	1

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Yale University School of Medicine	(1916)	Connecticut
George Washington University Medical School	(1925)	California
Howard University School of Medicine	(1925)	Kansas
Rush Medical College	(1929)	Illinois
University of Louisville School of Medicine	(1926)	Kentucky
University of Maryland School of Medicine	(1925)	Maryland
University of Minnesota Medical School	(1905)	Minnesota
University of Nebraska College of Medicine	(1925)	California
Columbia University College of Phys. and Surgs.	(1922)	New York
Ohio State University College of Medicine	(1926)	Ohio
Western Reserve University School of Medicine (1926) Ohio	(1924)	Mass.
Hahnemann Med. College and Hosp. of Philadelphia (1927) Delaware, (1928) New York	(1917)	New Jersey
Jefferson Medical College	(1924)	Ohio
University of Pennsylvania School of Medicine (1918) New York, (1923) Florida	(1916)	Alabama
Vanderbilt University School of Medicine	(1924)	Tennessee

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
Loyola University School of Medicine	(1929)	N. B. M. Ex.
University of Pennsylvania School of Medicine	(1927)	N. B. M. Ex.
Woman's Medical College of Pennsylvania	(1928)	N. B. M. Ex.
Johns Hopkins University School of Medicine	(1925)	N. B. M. Ex.

* Verification of graduation in process.

Book Notices

SYNOPSIS OF MIDWIFERY AND GYNÆCOLOGY. By Alex W. Bourne, B.A., M.B., B.Ch., Senior Obstetric Surgeon, Queen Charlotte's Hospital. Fourth edition. Cloth. Price, $4.50 net. Pp. 434, with 171 illustrations. New York: William Wood & Company, 1929.

This book is arranged in the form of an outline. The first part is devoted to obstetrics and the second part to gynecology. The author classes all the toxemias of pregnancy, both early and late, under the heading of autointoxications. He advocates the use of "veratrone," which has long been discarded in this country because of its dangers. He recommends conservatism in the treatment of eclampsia but he does not say anything about the advantages of local anesthesia for patients with toxemia. He prefers the classic cesarean section as the usual type to be performed and advocates the use of silkworm-gut for suturing the uterine wound. The cervical type of operation has proved to be superior for all types of cases except infected ones and there is no necessity to use silkworm to make certain that the wound edges will remain approximated. In the discussion on the etiology of leukorrhea, Bourne fails to mention *Trichomonas vaginalis*. The importance of this organism as a source of troublesome vaginal discharge was recently pointed out by Greenhill and by Davis. In the discussion of the treatment of cervical erosions there is no mention of the nasal tip cautery, although this is superior to the actual Paquelin cautery suggested by the author. Too much space is devoted to chronic endometritis, which is really an unusual condition. These minor criticisms cannot, however, detract from the value of this book, which contains an enormous amount of useful information in outline form.

DIE UNFRUCHTBARMACHUNG AUS RASSENHYGIENISCHEN UND SOZIALEN GRÜNDEN. Von Dr. Otto Kankeleit, Nervenarzt. Paper. Price, 5.50 marks. Pp. 112, with 7 illustrations. Munich: J. F. Lehmanns Verlag, 1929.

The author, a neurologist, reviews the literature on sterilization of the mentally unfit. He treats this problem from both the hygienic and the social point of view and considers the attitude not only in Germany but also in other countries, including the United States. The various methods of sterilization of both male and female are analyzed. The author is a firm believer in sterilization of the mentally unfit, and he says that a method should be chosen which will not deprive them of the gonads. Such procedures will not bring about mental and physical changes and will not deprive the individual of ability to have intercourse. For persons with criminal sexual tendencies the author advocates castration. An extensive bibliography enhances the value of this book.

HEALTH HABITS. By S. Weir Newmayer, A.M., M.D., Supervisor of Medical Inspection of Public Schools, Philadelphia, and Edwin C. Broome, Ph.D., LL.D., Superintendent of Schools, Philadelphia. The Health and Happiness Series. Cloth. Price, 72 cents. Pp. 207, with illustrations. Chicago: American Book Company, 1928.

More and more as health is becoming a subject of proper study for the child, excellent works are being made available to the teacher. The Newmayer and Broome series is efficient in every sense of the word. The series provides for the school child of every age health material that is practical, well written, beautifully and profusely illustrated and quite sound. The emphasis is on scientific fact, but the facts are not offered in such a manner as to kill inspiration.

ŒSOPHAGEAL OBSTRUCTION: ITS PATHOLOGY, DIAGNOSIS AND TREATMENT. [Based on the Jacksonian Prize Essay of the Royal College of Surgeons of England for 1924 (Published by Permission of the Council) and Including a Hunterian Lecture Delivered at the Royal College of Surgeons in 1926.] By A. Lawrence Abel, M.S., F.R.C.S., Assistant Surgeon to the Cancer Hospital, London. Cloth. Price, $9. Pp. 234, with 132 illustrations. New York: Oxford University Press, 1929.

This is well written in good, clear English, for both the student and the practicing physician. The subject is thoroughly handled. As the author states, the diagnosis is not made early enough because insufficient attention is paid to the early symptoms. He advises immediate roentgen examination. The anatomy, physiology and pathology are covered in an exhaustive manner. The treatment is given at length from the dietary, medicinal and instrumental points of view. The various methods of handling esophageal obstruction are given in full detail and with ample illustrations. The book contains a complete bibliography.

THE BIOCHEMISTRY OF THE AMINO ACIDS. By H. H. Mitchell, Professor of Animal Nutrition, College of Agriculture, University of Illinois, and T. S. Hamilton, Associate in Animal Nutrition, College of Agriculture, University of Illinois. American Chemical Society Monograph Series. Cloth. Price, $9.50. Pp. 619, with 19 illustrations. New York: Chemical Catalog Company, Inc., 1929.

This is listed as number 48 in the American Chemical Society monograph series. The subjects covered are the physical and chemical properties of the amino-acids; the determination of amino-acids in proteins; the determination of the individual amino-acids; the liberation of the amino-acids in the intestinal tract; general amino-acid metabolism (absorption and anabolism); general amino-acid metabolism (catabolism and utilization as sources of energy); special phases of amino-acid metabolism; the specific dynamic effect of amino-acids; the endogenous catabolism; the nutritive value of proteins, and the protein values of foods in nutrition. The subjects are presented rather completely, typographic errors are few and easily recognized as such, and the information is largely accurate. The authors attempt to evaluate the merits and demerits of much of the experimental work that is presented. This is commendable since it adds an element of interest. The mode of presentation is not particularly interesting or stimulating. Repetitions are perhaps too frequent and the detail is fatiguing. The book consists largely of a catalogue of experimental facts with interpretations by the authors. One has the impression that less detail might have been more desirable; but this, of course, depends largely on the reader's previous training and how he expects to use the book. The chemist and the biochemist will welcome the book because it contains a collection of facts and literature that can hardly be duplicated in any other single place. The book would not be of much interest to the majority of physicians, for, although some of the information would undoubtedly be of some use, no particular effort has been made to segregate that which is immediately useful from that which is of purely and probable scientific interest.

HANDBUCH DER INNEREN SEKRETION: EINE UMFASSENDE DARSTELLUNG DER ANATOMIE, PHYSIOLOGIE UND PATHOLOGIE DER ENDOKRINEN DRÜSEN. Lieferung 5, Band I. Herausgegeben von Dr. Max Hirsch. Paper. Price, 26 marks. Pp. 709-866, with 12 illustrations. Leipzig: Curt Kabitzsch, 1929.

This chapter on the thymus, by Dr. Löwenthal of Berlin, is one of the best in the large handbook. The author takes up the development, structure, and changes in various disease conditions, especially changes in the thymus in all the conditions of the glands of internal secretion. He goes thoroughly into the apparent relation of the thymus to thyroid disorders. He takes up again the question of the relation of the thymus to the syndrome known as the status thymicolymphaticus and the responsibility, if any, of the thymus in so-called thymic death. Every phase of this discussion gives evidence of good information and sound judgment. The author concludes the whole monograph by the statement: "The thymus as an internal secretory function is not yet demonstrated. In fact, the function of the thymus is largely unknown at present." Dr. Löwenthal is inclined to regard the changes of the thymus under varying experimental and disease conditions as secondary manifestations rather than a primary etiologic factor.

RECENT ADVANCES IN TROPICAL MEDICINE. By Sir Leonard Rogers, C.I.E., M.D., B.S., Major-General Indian Medical Service. Second edition. Cloth. Price, $3.50. Pp. 439, with 16 illustrations. Philadelphia: P. Blakiston's Son & Company, 1929.

In this small volume the author has omitted much of the zoology and experimentation, limiting the book largely to symptoms of tropical disease, pathology, epidemiology and treatment. In this edition, sections have been added on oroya fever and verruga peruana, granuloma inguinale and climatic bubo, and helminthous infections. Rogers has endeavored to prevent increasing the size of the book by omitting some old material. It remains a handy volume; in fact, it can be carried in a good-sized pocket. The research on oroya fever and verruga peruana by Noguchi published since Noguchi's death, the author believes, establishes that the two diseases are different manifestations of a single infection. He notes in a section on undulant fever the possibility of the *Bacillus abortus* of Bang infecting man, but he commits himself no further than to say that the three organisms *Micrococcus melitensis, Micrococcus paramelitensis* and the *Bacillus abortus* of Bang can be differentiated only by absorption tests and to some extent by their pathogenicity to animals. *Endameba histolytica,* he says, has been found in a small percentage of healthy persons in the temperate climates of western Europe, and indigenous cases have occurred in the northern United States. A lookout should be kept for them. The recent report in THE JOURNAL of the cases of amebiasis found in Chicago shows that his advice is good. There is no general agreement as yet regarding the cause of sprue, despite the large amount of investigation, although recent work trends toward two theories: (1) that disturbances are due to dietary deficiences and (2) that sprue is an infectious disease produced by yeast fungi, streptococci or some unknown organism. He does not say that the classic work of Goldberger established that pellagra is a dietary deficiency disease, but he believes that Goldberger furnished strong evidence toward proving that such is the case. The book covers the more important tropical diseases concisely. In it, practitioners may find the practical points without having to read much which, for the moment, does not interest them.

HANDBUCH DER NORMALEN UND PATHOLOGISCHEN PHYSIOLOGIE MIT BERÜCKSICHTIGUNG DER EXPERIMENTELLEN PHARMAKOLOGIE. Herausgegeben von A. Bethe, G. v. Bergmann, G. Embden, und A. Ellinger. Band XII, Teil 1: Receptionsorgane II; Photoreceptoren. Von R. Dittler, U. Ebbecke, E. Engelking, usw. Paper. Price, 69 marks. Pp. 741, with 238 illustrations. Berlin: Julius Springer, 1929.

Since 1926, thirteen reviews have appeared from time to time in these pages dealing with the individual volumes of this seventeen volume Handbook of Normal and Pathologic Physiology, which is now rapidly nearing completion. No research institution of physiology can afford to be without this working tool, irrespective of the cost. The individual volumes can be bought separately and are therefore available to physicians interested more especially in limited fields of normal and abnormal function (e. g., heart [volumes VII[1] and VII[2]], digestive apparatus [volume III], and so on). The present split volume deals with light receptions. The treatment is exhaustive. There are sections on phototropism and phototaxis in plants and in animals, dioptrics of the eye, accommodation of the eye in man, and the comparative physiology of accommodation in the vertebrates and the invertebrates. The physiology and pharmacology of the iris is discussed at length. Needless to say, the physiology of the retina is treated in extenso. The last 400 pages are devoted to light and color vision and its deviations from the normal. A final and short chapter deals with color vision in animals. The second half of this volume (not yet published) will deal with electrical phenomena of the eye, adaptations and night vision.

PHYSICS IN MEDICAL RADIOLOGY. By Sidney Russ, D.Sc., F.Inst.P., Joel Professor of Physics, the Medical School, Middlesex Hospital; L. H. Clark, Ph.D., F.Inst.P., Research Assistant, Physics Department, Middlesex Hospital, and R. D. H. Watters, M.Sc., A.Inst.P., Demonstrator, Physics Department, Middlesex Hospital. Cloth. Price, 12/6 net. Pp. 234, with 72 illustrations. London: Chapman & Hall, Ltd., 1928.

As electricity and radioactivity have come more and more into the medical field it has become increasingly necessary for the physician to have a knowledge of fundamental physics if he is going to use these methods intelligently. Pedagogy has not kept pace with the demand in these fields. The present textbook is an attempt to put before the medical reader those parts of physics, pure and applied, which bear directly on the subject of medical radiology. In Great Britain several universities have outlined courses whereby one may proceed in an orderly manner to a special diploma in these fields. This book is an aid toward such progress. Certainly any physician who is attempting to follow the advanced literature in radiology will find the book valuable.

A PRACTICAL TREATISE ON DISORDERS OF THE SEXUAL FUNCTION IN THE MALE AND FEMALE. By Max Huhner, M.D., Chief of Clinic, Genito-Urinary Department, Mount Sinai Hospital Dispensary, New York City. Third edition. Cloth. Price, $3 net. Pp. 342, with illustrations. Philadelphia: F. A. Davis Company, 1929.

This book is devoted to a presentation of all the disorders of the sexual functions. All the material available is carefully collected and sifted. The stumbling block of becoming salacious in discussing such matters is skilfully evaded. The author lays great stress on the practical side of these questions, placing treatment in the foreground. The various methods are subjected to constructive criticism evidently based on extensive personal experience.

LANDOIS' LEHRBUCH DER PHYSIOLOGIE DES MENSCHEN MIT BESONDERER BERÜCKSICHTIGUNG DER PRAKTISCHEN MEDIZIN. Bearbeitet von Dr. R. Rosemann, o. ö. Professor der Physiologie und Direktor des physiologischen Instituts der Westfälischen Wilhelms-Universität zu Münster. Nineteenth edition. Paper. Pp. 842, with 171 illustrations. Berlin: Urban & Schwarzenberg, 1929.

The general plan of this edition is the same as when the book first appeared in 1879. Because of advances in the science of physiology, the histologic sections have been replaced by newly acquired physiologic data. The book has always had a special appeal because the author and Professor Rosemann, his pupil, have included in small type in each section valuable data on the comparative and pathologic physiology of the organ in question. An historical review, synoptic but interesting, concludes the individual sections of the book. In the latter editions of the book Rosemann has added at the end of certain divisions of the text bibliographic references for those desiring more detailed knowledge. No other textbook contains all these features concentrated in a total of 842 pages. Little wonder, then, that it has been translated into English, French, Spanish, Italian, Russian and Japanese.

THE INTERNATIONAL FACTORY CLINIC FOR THE TREATMENT BY SUN AND WORK OF INDIGENT CASES OF "SURGICAL" TUBERCULOSIS. By Auguste Rollier, Surgeon-Director of the Heliotherapeutic Establishments at Leysin. Paper. Pp. 51, with 107 illustrations. Leysin, 1929.

This is an amply illustrated exposition of Rollier's ideas of the value of sunlight for the cure of tuberculosis of the bones and joints. The idea is carried a step further, from the sun cure to the work cure. Only an orthopedic minimum of splintage or postural rest as for spinal tuberculosis is used. The patient is kept in the open air and sunlight and is allowed to pursue his occupation from basket weaving to expert mechanical

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work. Tools, sometimes motor driven, are placed where he can reach and use them. The happy combination of useful occupation with rest in sunlight effects the cure, which is verified by photographs of progress. Thus is surgical tuberculosis cured without surgery and healthy beings returned to work, capable of earning their own livelihood.

ARTERIAL HYPERTENSION: PATHOGENESIS. By Prof. A. A. Bogomoletz. Paper. Pp. 48. Moscow: Government Medical Publication, 1929.

Bogomoletz considers hypertension and carcinoma the main factors in preventing human beings from reaching old age. According to Fahr's statistics, this "sad discovery of the present century is the cause of death in 23 per cent of people reaching the age of 50." After reviewing the numerous theories of hypertension, such as the neurogenous, nephritic and vascular, including the angiospasms, endocrine and chemical, Bogomoletz comes to the conclusion that the etiologic factors are varied and numerous but that no essential hypertonia exists. It is mainly a manifestation of hypersympathicotonia; it is an angioneurosis caused by a disturbed relationship between the neuromuscular apparatus of the smallest arterioles and their nerve centers. The exaggerated excitability of the foregoing structures are at the bottom of the arterial hypertonia. Gross anatomic changes, absent at first, set in later, while chemical changes are probably of little significance. Though some part may be played by the functional inactivity of the liver and the imbalance of certain endocrine glands, nephritis is decidedly not the cause. Like arteriosclerosis, cerebral hemorrhage and irreparable myocardial insufficiency, it is the result and not the cause of hypertension. The removal of all the influences that are capable of increasing the excitability of the vasomotor nerves and their centers is the foundation of the prophylaxis and the treatment of this morbid condition. The discussion of the mass of information referred to in this little book is of necessity brief and superficial, with few exceptions. It is a sketch as the author himself calls his booklet, and a short one, with few references to the literature, and it is printed on poor paper.

LEHRBUCH DER ENTWICKLUNG DES MENSCHEN. Von Dr. Alfred Fischel, o. Professor der Embryologie und Vorstand des embryologischen Institutes der Wiener Universität. Paper. Price, 86 marks. Pp. 822, with 668 illustrations. Vienna: Julius Springer, 1929.

This excellent textbook adds one more to the considerable list of those which have come from the anatomists of the University of Vienna, where Dr. Fischel is professor of embryology. Its publication by Julius Springer is a guarantee of quality, and it maintains the Springer standard of excellence in the illustrations and press work. The first part (271 pages) is devoted to a clear and scholarly presentation of general and comparative embryology. The remainder is devoted to a thorough and intelligible account of human organogenesis. The literature of all countries has been thoroughly studied, and the great advances in understanding which have come through investigations in experimental embryology are well presented. They have made untenable in any but the most general sense the biogenetic law of Haeckel. The book is a clear and definite exposition of facts: there is little philosophic speculation in it. But the author does not believe in teleology, i. e., purpose in the embryo, though there is manifest throughout its history a tendency toward the adult form. Some of the parts which are especially good are those dealing with the bones, the sense organs, the excretory apparatus, and the first part dealing with general and comparative embryology. The illustrations are excellently chosen and illuminating. Many are colored. Many represent transparent preparations or are drawn as though some of the structures were transparent. These are particularly instructive. Nine per cent of the illustrations are from American sources.

A SHORTER SURGERY: A Practical Manual for Senior Students. By R. J. McNeill Love, M.B., M.S., F.R.C.S., First Surgical Assistant, London Hospital. Cloth. Price, $4. Pp. 299, with 43 illustrations. New York: William Wood & Company, 1929.

The title of this small volume summarizes all that one might say of it in review. It is a manual for students, devoted, with the exception of the chapters on tumors, exclusively to regional surgery. There are many textbooks of this type; and they are of dubious merit and have little or no teaching value.

Miscellany

AMERICAN COMMITTEE FOR THE CONTROL OF RHEUMATISM

Third Meeting, held at Kansas City, Mo., Oct. 10, 1929

(Reported by Dr. M. S. Henderson, Secretary)

The members present were Ralph Pemberton, Philadelphia, chairman; Melvin S. Henderson, Rochester, Minn., secretary; Charles G. Bass, New Orleans; Russell L. Cecil, New York; A. A. Fletcher, Toronto; Russell L. Haden, Kansas City, Mo.; Joseph L. Miller, Chicago; J. Archer O'Reilly, St. Louis, and Robert B. Osgood, Boston.

A motion was made and carried that the chairman appoint a committee to draw up a brief concept of the disease chronic rheumatism or arthritis based on the opinions expressed in a discussion of recent contributions to the subject. The purpose of the motion was twofold: (1) to ascertain whether a consensus could be reached by the general committee, and, if such a consensus was reached, (2) to make possible the publication of such a concept in the medical journals. The chairman appointed Dr. Fletcher, Dr. Cecil and Dr. Osgood to serve on this committee.

Dr. Pemberton reported that there had been no activities on the part of the Research Committee because he felt that the time was not ripe for such action on the part of this committee as had been planned. It was recommended that the Research Committee be continued.

At the previous meeting it had been suggested that a method be developed whereby arthritis and its various phases might be brought to the attention of various medical groups through their different societies. No definite routine had been established, but it was evident from the information given by the members present that there had been many papers on arthritis presented at various medical meetings by different members of the committee. All agreed that the profession at large was really deeply interested in the subject and was already looking to the committee for something definite.

It was voted to send a report of this meeting of the committee to the international secretary, Dr. Van Breemen, at Amsterdam. It was also voted that the committee contribute $500 to the international committee.

The committee felt that the time was approaching when lay members should be added to its list, such as an auxiliary committee, and that it would be a good plan for the various members to approach certain public-spirited individuals who had shown or who might show interest in the work of the committee.

It was moved, seconded and approved that arrangements be made for an exhibit on arthritis to be held at some appropriate time and place in the near future. The secretary was instructed to write to Dr. Kellogg Speed, Chicago, and to Dr. Reginald Fitz of Boston, secretary of the Section on Practice of Medicine of the American Medical Association, to ascertain their attitude toward the presentation of papers on arthritis and on exhibits at the annual session.

The secretary was instructed to write Dr. Van Breemen requesting him to furnish, if possible, to every member of the American committee a copy of Acta Rheumatica.

The subcommittee appointed to draw up a concept of the disease commonly called chronic rheumatism or arthritis submitted its report. After discussion, the report was unanimously adopted by the committee as a whole.

CONCEPT OF COMMITTEE CONCERNING THE DISEASE COMMONLY CALLED CHRONIC RHEUMATISM OR ARTHRITIS

1. The disease chronic arthritis, prevalent in all temperate zones, represents one of the most important, if not the most important, of existing social and industrial handicaps.

2. The committee conceives of the disease as a generalized disease with joint manifestations. Certain prodromes may be recognized and it is of vital importance to the body politic that they be recognized.

3. It is the opinion of the committee that at the present time no single infectious agent or any completely defined dietary deficiency or metabolic disturbance has been conclusively shown

to be the sole cause of these disorders. The committee inclines to the belief that any one of these factors or certain combinations of these factors, under appropriate circumstances, may basically underlie the onset of the disease.

4. The committee feels it of vital importance that the medical profession have its conscience awakened to the methods of treatment of proved value which are at present at its disposal. The committee feels that the lay public, through their medical advisers and through the public press, should also be made aware of the danger to their efficiency and happiness which the inroads of the disease imminently threaten.

5. In the light of the foregoing considerations the committee purposes to broadcast, as widely as possible, both to the profession and to the public, its concept of the nature of the types of arthritis included under the heading chronic rheumatism, its belief as to the probable predisposing and exciting causes of the disease, and the knowledge which the committee possesses or may acquire as to the most efficient methods of treatment.

6. It is the belief of the committee that optimism rather than pessimism should dominate the attitude of the profession toward this problem. In most cases treatment should represent a combination of various coordinated measures of therapy rather than one single procedure. Experience leads to the belief that under such circumstances an attitude of optimism toward the control of the disease is justified.

Medicolegal

Practice of Dentistry by a Corporation

(People v. Painless Parker Dentist (Colo.), 275 P. 928; People ex rel. Mahurin et al. v. State Board of Dental Examiners of Colorado et al. (Colo.), 275 P. 933)

"Painless Parker Dentist" is a corporation organized under the laws of California. Without obtaining a license to practice dentistry in Colorado, it maintained and operated a dental office in Denver and publicly advertised that it was engaged in the practice of dentistry. It employed agents to diagnose the condition of patients who came to the office and to perform the necessary operative dental surgery on them. These agents were paid by the corporation and were under its direction; they had no contractual relation with their patients. It does not seem to have been denied that these agents were licensed dentists.

The district attorney brought action under chapter 28 of the Code of Civil Procedure of Colorado[1] to prevent the corporation from unlawfully usurping the franchise of practicing dentistry, since it had not procured a license to practice. The trial court sustained a demurrer to the complaint and dismissed the action. On appeal, the supreme court of Colorado reversed the judgment of the court below and remanded the case with instructions to set aside the judgment and in lieu thereof to enter an appropriate judgment of ouster of the defendant. A rehearing was denied. A petition for a writ of certiorari was denied by the U. S. supreme court (50 S. Ct. 25).

The defendant corporation contended that it was not practicing dentistry. True, said the Colorado supreme court, the defendant as a corporation cannot extract teeth or diagnose the condition of patients or perform dental surgery; but it purports to do such acts through natural persons whom it has selected for that purpose, and it uses as a part of its corporate name the word "dentist," which the statute says shall be regarded as practicing dentistry (C. L. 1921, sec. 4571). The defendant admitted that, since it existed as a corporation only, it could not comply with the requirements of the statute as to study, nor pass an examination, furnish a certificate of morals and character, nor obtain a diploma from a dental college, without which no person could obtain a license. It argued, however, that its very inability to comply with the statute justified it in practicing without doing so. But the supreme court thought that it would be strange to hold that, because a corporation cannot pass an examination and furnish evidence of a good moral character, it might practice without a license, although a citizen, a human being, could not practice unless he had a license. Whether the inability to obtain a license is due to inherent difficulties in the case of a corporation, or to mental or moral unfitness in the case of a natural person, is immaterial. The supreme court concluded, therefore, that the statute prohibiting the practice of dentistry by unlicensed persons was broad enough to prohibit practice by a private corporation.

The court undertook to distinguish this case from *Louis K. Liggett Co.* v. *Baldridge*, 278 U. S. 105, 49 S. Ct. 57, in which the United States supreme court held unconstitutional a Pennsylvania statute which prohibited the ownership of drug stores, or interests in corporations, partnerships or associations owning such stores, by persons other than licensed pharmacists. In that case, said the supreme court of Colorado, the United States supreme court said that the plaintiff corporation was conducting an ordinary business and pointed out that the mere ownership and operation of a drug store could have no real nor substantial relation to the public health; and the Pennsylvania act was held unconstitutional because it created an unreasonable and unnecessary restriction on private business. But it is a fallacy, said the supreme court of Colorado, to argue that, since a corporation can engage in an ordinary calling or business as fully and completely as a natural person can, a corporation may therefore engage in the practice of dentistry. Neither law, medicine nor dentistry is an ordinary trade or calling which all citizens alike may pursue. Only those who are qualified by study and experience to practice dentistry may do so, if the legislature sees fit so to ordain, and the legislature may lawfully provide, as it has done in Colorado, that only those who by study of the art and science of dentistry are properly qualified may lawfully practice that art.

Supplementing the action of the district attorney to oust "Painless Parker Dentist," as a corporation, from the practice of dentistry, discussed above, the state board of dental examiners initiated action to revoke the licenses of the dentists employed by the corporation to carry on its business. The corporation and these dentists filed a petition for a writ of prohibition to prevent such action. The district court dismissed the petition, and the petitioners appealed to the supreme court of Colorado. The supreme court, coincidentally with its decision in the main case, *supra*, affirmed the judgment of the district court, thus leaving the board free to continue the revocation proceedings.

1. An action may be brought by the district attorney in the name of the people of this state, upon his own information, or upon the relation and complaint of a private party, against any person who usurps, intrudes into, or unlawfully holds or exercises any public office, civil or military, or any franchise within his district in the state. . . . Colorado Code of Civil Procedure, chap. 28.

Malpractice: Liability for Improper Discharge from Hospital.—A surgeon, in appealing from a judgment in a malpractice suit, assigned as error the refusal of the trial court to charge the jury that they could not base a verdict in favor of the plaintiff on the fact, if it was a fact, that the plaintiff was prematurely discharged from the hospital. This refusal, however, the supreme court of Alabama held to be correct, because the charge ignored the instructions which the plaintiff insisted the surgeon gave at the time of discharge, to the effect that the injured hand would not need much dressing, and proof that considerable infection and inflammation were present and that discharge from the hospital under such circumstances was ill advised. The surgeon denied having given the instructions complained of, but the circumstances were a part of the defendant's treatment of the plaintiff, to be considered by the jury in connection with all the evidence in the case.—*Torrance v. Wells (Ala.), 122 So. 322.*

Society Proceedings

COMING MEETINGS

American College of Physicians, Minneapolis, February 10-17. Mr. E. R. Loveland, 133 South 36th Street, Philadelphia, Executive Secretary.
American Heart Association, New York, February 3. Dr. I. C. Riggin, 370 Seventh Avenue, New York, Executive Secretary.
American Orthopsychiatric Association, New York, February 21-22. Dr. George S. Stevenson, 370 Seventh Avenue, New York, Secretary.
Pacific Coast Surgical Association, Del Monte, Calif., February 7-8. Dr. E. L. Gilcreest, 384 Post Street, San Francisco, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Medical Sciences, Philadelphia

178: 741-896 (Dec.) 1929

Influence of Research in Bringing into Closer Relationship Practice of Medicine and Public Health Activities. T. Smith, Princeton, N. J.—p. 741.

*Etiologic Relationship of Achylia Gastrica to Pernicious Anemia: I. Effect of Administration to Patients with Pernicious Anemia of Contents of Normal Human Stomach Recovered After Ingestion of Beef Muscle. W. B. Castle, Boston.—p. 748.

*Id.: II. Effect of Administration to Patients with Pernicious Anemia of Beef Muscle After Incubation with Normal Human Gastric Juice. W. B. Castle and W. C. Townsend, Boston.—p. 764.

*What Is the Risk of Insuring Applicants with Peptic Ulcer? W. C. Alvarez, Rochester, Minn.—p. 777.

Chronic Duodenal Stasis: Twenty-Four Cases. J. Friedenwald, T. H. Morrison and M. Feldman, Baltimore.—p. 796.

*Effect of Intravenous Injections of Various Emulsions of Fat on Emptying of Gallbladder. G. M. Higgins and C. M. Wilhelmj, Rochester, Minn.—p. 805.

Rumination in Man: Six Cases. C.-F. Long, Philadelphia.—p. 814.

Stools Cultured for Endameba Histolytica for Diagnostic and Other Purposes. C. J. Tripoli, New Orleans.—p. 822.

*Infections Probably Due to Morgan's Bacillus. R. d'Aunoy, New Orleans.—p. 834.

*Diabetes Insipidus and Lesions of Midbrain: Case Due to Metastatic Tumor of Hypothalamus. T. B. Futcher, Baltimore.—p. 837.

*Mikulicz's Disease and Mikulicz Syndrome. J. P. C. Griffith, Philadelphia.—p. 853.

Effect of Administration to Patients with Pernicious Anemia of Contents of Normal Human Stomach Recovered After Ingestion of Beef Muscle.—A consideration of the existing facts concerning the achylia gastrica of addisonian pernicious anemia, together with the recently acquired knowledge of the effects of liver therapy, Castle says, leads to the conception of the disease as possibly due to a deficiency of a new type. A working hypothesis has been developed which postulates that the development of the disease is dependent on an inadequate gastric digestion of protein, thus permitting the development of a virtual deficiency in the face of a diet adequate for the normal man. The results of observations designed as a preliminary test of this hypothesis are reported by Castle and are believed to be consistent with it but not necessarily to prove it. To each of three patients with pernicious anemia was given daily for a period of ten days between 200 and 300 Gm. of finely divided raw beef muscle without demonstrable effect on the blood formation during a total of fourteen days. Immediately thereafter to each of these three patients and to seven others were given daily the incubated contents of a normal human stomach recovered after the ingestion of similar quantities of beef muscle. In the three patients mentioned, and in five of the seven others, comprising in all ten patients so treated, there appeared before the tenth day an increase of the immature red blood cells followed by a progressive improvement of the anemia entirely similar to that ordinarily observed with the daily ingestion of moderate amounts of liver by similar patients. It is concluded that, in contrast to the conditions within the stomach of the pernicious anemia patient, there is found within the normal stomach during the digestion of beef muscle some substance capable of promptly and markedly relieving the anemia of these patients.

Effect of Administration to Patients with Pernicious Anemia of Beef Muscle After Incubation with Normal Human Gastric Juice.—The validity of the hypothesis that the development of the disease pernicious anemia is dependent on an inadequate gastric digestion of protein, thus permitting the development of a virtual deficiency in the presence of a diet adequate for the normal man, was further examined by Castle and Townsend. The results of experiments made by them are considered to add greatly to the probability of the hypothesis. Three patients who had pernicious anemia were given daily from 150 to 300 cc. of incubated gastric juice secreted by fasting normal men after histamine injection. In two of these patients the gastric juice was incubated for two hours with an indifferent protein, and in none of these patients was there evidence of effect on blood formation within fourteen days. To four patients with pernicious anemia was given daily for ten days in the afternoon 300 cc. of incubated fasting gastric juice secreted under histamine stimulation, and in the morning 200 Gm. of beef muscle, incubated in two of the patients with hydrochloric acid, and in the other three with water. In two of these patients no effect on blood formation was observed within fourteen days. In one patient a slight effect occurred and in another a distinct effect on blood formation was observed. However, in all of these patients a much greater effect was seen when similar quantities of gastric juice and beef muscle were incubated together. In a fifth case, complicated by cystitis, no effect was seen with either set of conditions. To the eight patients just referred to and to two others was given from 150 to 300 cc. of fasting human gastric juice secreted under histamine stimulation, incubated in the presence of hydrochloric acid at p_H 2.5 to 3.5 for two hours with 200 Gm. of beef muscle. In all but two of these ten cases an effect on blood formation was comparable to that seen with the similarly treated normal gastric contents in the first series of patients. Before the tenth day there appeared an increase of the immature red blood cells followed by a progressive improvement of the anemia comparable to that ordinarily seen with the daily ingestion by similar patients of from 135 to 225 Gm. of prepared liver. It is concluded that by some interaction of normal human gastric juice and beef muscle, both of which have been shown to be individually ineffective, a substance can be developed which is capable of promptly and markedly relieving the anemia of certain patients with addisonian pernicious anemia. It is believed that for the first time a relationship between the stomach and the function of the bone marrow of the human being has been demonstrated, and the general belief that the integrity of the stomach is unnecessary to proper body metabolism brought into question.

What Is the Risk of Insuring Applicants with Peptic Ulcer?—Alvarez concludes from his study that persons with ulcer are not fit subjects for health insurance. Great care must be taken to distinguish between those with duodenal and those with gastric ulcer not only on account of the higher risk of operations for gastric ulcer but because there is a definite possibility either that the lesion is cancerous at the time of examination or that it will become cancerous later. Persons past 40 years of age with recently acquired indigestion of any kind are particularly undesirable as risks. It is impossible in many cases to distinguish, even at operation, between benign and malignant ulceration. The only way to cure cancer of the stomach is to operate on healthy looking men and women with a slight but definite irregularity in the outline of the barium-filled stomach. Persons with duodenal ulcer might be accepted as substandard risks when, after either medical or surgical treatment, symptoms have been absent for six years. From statistics presented, it would seem obvious that no one over 30 years of age should ever be accepted when the symptoms have been of short duration and when a "cure" has been but recently accomplished.

Effect of Intravenous Injections of Various Emulsions of Fat on Emptying of Gallbladder.—Observations made by Higgins and Wilhelmj on the gallbladders of cats and dogs following the intravenous and oral administration of certain emulsions of fat show rather definitely that contraction of the gallbladder does not take place when these emulsions are injected directly into the blood stream. This is true whether or not the fats are partially digested prior to the injection. The emulsions most extensively studied were olive oil and dog fat, in either autogenous serum or a 2 per cent lecithin solution. Emulsions were used either with or without a known quantity of sodium glycocholate. The injections were made slowly through the jugular or the saphenous vein, and the animal

ordinarily remained quiet during the entire period. Studies of the gallbladder following the intravenous injection of these emulsions were made by the cholecystographic method following the injection of iodized oil, intubation of the common duct, and the necropsy method. The results of these three methods of study are in agreement in that the gallbladders of cats and dogs do not empty when the emulsions of fat described are injected into the blood stream. Slight tonic changes which are noted are considered as insignificant and wholly unrelated to the presence of the fat. Observations made on the gallbladders of cats, following the oral administration of the emulsions described, show conclusively that the vesicle empties in response to these foods in the gastro-intestinal tract, and, accordingly, the conclusions are manifest that contraction of the gallbladder is related to gastro-intestinal activity either of a hormone or of nervous excitation.

Infections Probably Due to Morgan's Bacillus.—The isolation of Morgan's bacillus in cases of pyrexia, pyelitis and colitis is reported by d'Aunoy. One strain isolated proved pathogenic for small laboratory animals. Agglutinins were demonstrated for homologous organisms in the blood of all three patients. Observations on some biologic characteristics of the organism are presented together with a plea in support of Thjötta's position for noninclusion of the organism in the genus *Salmonella*.

Diabetes Insipidus and Lesions of Midbrain.—A case of diabetes insipidus due to an alveolar carcinoma of the hypothalamus, secondary to a primary carcinoma of the lung and without an involvement of the pituitary, is reported by Futcher. The case would naturally tend to support the view held by many that the diabetes insipidus is due to disturbance of certain regulatory centers in the hypothalamus. Reference is made to the fact that it now seems amply demonstrated that there are definite nerve fibers connecting the tuber cinereum and the posterior lobe of the hypophysis. The belief is expressed that, although there may be certain centers in the hypothalamus regulating water exchange in the body, the evidence seems strong that disturbance of the action of a diuretic-antidiuretic hormone produced in the posterior lobe of the pituitary is an important factor in the etiology of the disease, possibly by sensitizing these centers or by influencing their function.

Mikulicz's Disease and Mikulicz Syndrome.—Two cases of Mikulicz's syndrome are reported by Griffith; one dependent on leukemia, the other, which might be called Mikulicz's disease proper, having no discoverable cause. The symptoms and lesions are discussed with particular reference to the influence of tuberculosis. A study of some of the literature as well as the bioscopic examination in the author's case supports the conclusions of others; viz., that although tuberculosis may be a cause of Mikulicz's disease, it is rarely so, and that even a histologic appearance in the glands which strongly suggests tuberculosis is not a positive proof that the disease is present.

Archives of Neurol. & Psychiatry, Chicago

22: 1105-1321 (Dec.) 1929

Comparative Anatomy of Afferent System of Head. C. H. Frazier, Philadelphia.—p. 1105.
Posture: Cerebellum. P. Schilder, Vienna, Austria.—p. 1116.
Cerebral Localization and Failures in Written Language. C. K. Mills, Philadelphia.—p. 1127.
*Paresis Treated with Malaria. W. Malamud and R. B. Wilson, Foxborough, Mass.—p. 1135.
*Rôle of Infection in Etiology of Tics. L. Selling, Portland, Ore.—p. 1163.
*Narcolepsy (Gélineau's Syndrome) and Other Varieties of Morbid Somnolence. M. Levin, Philadelphia.—p. 1172.
Relativity of Psychogenic and of Constitutional Factors. F. I. Wertham, Baltimore.—p. 1201.
Capillary Forms in Relation to Certain Problems in Development. F. Powdermaker, Thiells, N. Y.—p. 1207.
*Tumors of Brain Among Filipinos. C. Reyes, Manila, P. I.—p. 1217.
Herpes Ophthalmicus Febrilis with Dendritic Keratitis Complicating Therapeutic Malaria. F. G. Ebaugh and R. A. Jefferson, Denver.—p. 1226.
Delayed Traumatic Serratus Paralysis. J. D. Ellis, Chicago.—p. 1233.
Frigidity in Woman. B. Karpman, Washington, D. C.—p. 1237.

Paresis Treated with Malaria.—In a study made by Malamud and Wilson of fifty-four cases of neurosyphilis in which the patients were treated with tertian malaria, serial examinations of the blood and cerebrospinal fluid at regular intervals in the course of prolonged clinical observation showed that there exists a definite correlation between the behavior of the index of permeability for bromides and the clinical course. It was found that: (1) in practically all cases of paresis in which treatment is not given there is an increased permeability for bromides (index below 2.80); (2) in cases in which malaria treatment was given there may or may not be a still further increase of permeability immediately after the cessation of the fever; (3) following this, however, in cases that subsequently show improvement, there is a gradual fall in permeability (rise of index to normal limits of from 2.8 to 3.2), whereas, (4) in cases which do not show improvement or in which the condition becomes worse there is no such decrease and there may be an even greater increase of permeability (index below 2.8). These fluctuations in the permeability index, furthermore, generally preceded the corresponding changes in the clinical picture. They could thus be utilized as guides in prognosis and indicators of further treatment. Contrary to this, the changes in the other reactions (Wassermann reactions of the blood and the cerebrospinal fluid, cell count, albumin, globulin and colloidal gold test) were not consistently related to the clinical picture. There was a tendency in all these to improvement, but this was exhibited in all cases (those which showed clinical improvement as well as those which showed further progress of the disease); besides that, it manifested itself some time after treatment. For both these reasons, therefore, these tests could not be regarded as reliable indicators of the probable prognosis. Histologic studies of cases of paresis in persons whose permeability index was determined shortly before death showed that there was a definite relation between the index and the amount of iron in the walls of the cerebral blood vessels. The determination of the permeability for bromides from the blood into the cerebrospinal fluid, because of its value as an indicator of clinical prognosis, on the one hand, and of the condition of the blood vessels, on the other, may be regarded as a link between the clinical and the histologic pictures.

Rôle of Infection in Etiology of Tics.—Three cases typical of tic are reported by Selling. Two had lasted for several years, one for several months. In all three there was definite evidence of focal infection. Two patients had chronically infected antrums; one had infected tonsils, adenoids, antrums, ethmoids and sphenoids. Radical removal of the foci of infection in all three cases resulted in definite and striking improvement. In none of the cases has there been a complete return to normality. Absorption over months and years has caused enough permanent harm to nerve cells to leave permanent residual symptoms. In spite of long duration of the disease, and in spite of the intensity of the symptoms, the clearing up of the focal infection has still been able to produce a striking amelioration, amounting as far as the usefulness of the patient is concerned to a complete cure.

Narcolepsy and Other Varieties of Morbid Somnolence.—Sixty-six cases of Gélineau's syndrome have been found by Levin in the literature, and five more cases are reported by him. In none of the five cases was there evidence that the patient had had encephalitis. In only one case was this considered even a remote possibility. In another case there was evidence of hypothyroidism. Three cases of morbid somnolence without cataplexy are reported. One occurred in a young man with obesity and mild hypothyroidism, one in a young man with a history suggestive of encephalitis, and one in a girl aged 10 who was mentally retarded and "constitutionally" somnolent.

Tumors of Brain Among Filipinos.—Reyes states that the incidence of primary intracranial tumors among Filipinos is not less than 0.61 per cent. A systematic examination of the brain in all cases coming to necropsy will no doubt raise this proportion. Primary intracranial tumors are more frequent during the second and third decades among females, and during the fourth decade among males. Tumors are more frequent among females (0.79 per cent) than among males (0.52 per cent), for which no explanation is offered. Sixty-one per cent of the tumors found were supratentorial; 32 per cent pituitary, and 7 per cent infratentorial (cerebellar). Forty-seven per cent of the tumors were gliomas and 33 per cent endotheliomas.

With the exception of a doubtful gliosarcoma, no primary malignant tumor was found. Twenty-three per cent of patients for whom histories were available showed no evidence of intracranial tumor and died of acute conditions, the discovery of the tumors being accidental and unexpected.

Colorado Medicine, Denver

26: 355-398 (Nov.) 1929

Acidosis in Children. E. L. Timmons, Colorado Springs.—p. 359.
Acidosis as Surgical Consideration. W. P. McCrossin, Colorado Springs. —p. 360.
General Medical Considerations of Acidosis. F. M. Heller, Pueblo.—p. 367.
Biochemical Considerations of Acidosis. R. C. Lewis, Denver.—p. 368.
Acidosis, Alkalosis and Dehydration. A. F. Hartmann, St. Louis.—p. 373.
General Anesthesia with Sodium Amytal. J. E. Struthers, Denver.—p. 387.
Pilonidal Sinus. D. Prey, Denver.—p. 390.

26: 399-471 (Dec.) 1929

Causes and Prevention of Blindness in Colorado. E. Jackson, Denver. —p. 402.
John Cotton Dana, Foster-Father of Denver Medical Library. H. Sewall, Denver.—p. 407.
Silicosis. T. E. Beyer, Denver.—p. 413.

Delaware State M. Journal, Wilmington

1: 193-214 (Nov.) 1929

Epilepsy: Modern Treatment. E. A. Strecker, Philadelphia.—p. 193.

Laryngoscope, St. Louis

39: 707-776 (Nov.) 1929

Aberrant Internal Carotids and Relation to Surgery of Pharynx. J. W. Carmack, Indianapolis.—p. 707.
Ductus Nasolacrimalis-Sinus Maxillaris Relations: Anatomic and Clinical Consideration. J. E. Davis, Hartford, Conn.—p. 721.
Sinusitis in Children. S. McCullagh, New York.—p. 729.
Otitic Pyemia with Jugular Sinus Thrombosis: Recovery Without Ligation. H. Dintenfass, Philadelphia.—p. 731.
Simulated Otitis Mucosus: Case. M. Fineberg St. Louis.—p. 737.
Bronchoscopy and Esophagoscopy. C. J. Imperatori, New York.—p. 740.
Diagnosis in Unusual Cases of Sinus Disease. E. R. Faulkner, New York.—p. 744.
Dilatation of Esophagus with Spasmodic Stricture. G. R. Brighton, New York.—p. 747.
Local Versus General Anesthesia in Tonsillectomy. H. Smith, New York. —p. 751.
Recurrent Tracheal Stricture. J. D. Kernan, New York.—p. 753.
Use of Diathermy in Treatment of Ear, Nose and Throat. L. M. Hurd, New York.—p. 755.

Maine M. Assn. Journal, Portland

20: 173-194 (Nov.) 1929

Perforative Appendicitis: Incidence and Controllable Factors in Prevention. H. M. Goodwin, Bangor.—p. 173.
Clinical Considerations of Acute Appendicitis. F. H. Jackson, Houlton. —p. 176.

Michigan State M. Soc. Journal, Grand Rapids

28: 729-834 (Nov.) 1929

Untoward Results in Fractures. F. C. Warnshuis, Grand Rapids.—p. 729.
*Effect of Vagal Pressure on Cardiac Rate and Rhythm. W. J. Wilson, Detroit.—p. 736.
Why of Buttermilk Feeding. D. H. Duffie, Central Lake.—p. 738.
Early Diagnosis of Exophthalmic Goiter. S. F. Haines, Rochester, Minn. —p. 740.
Encephalitis in Childhood. T. B. Cooley, Detroit.—p. 743.
What About Chronic Appendicitis? H. A. Royster, Raleigh, N. C.—p. 746.
*Hereditary Factors in Epilepsy: 1,000 Cases. W. Green, Wahjamega.—p. 749.
Treatment of Carcinoma of Breast. U. V. Portmann, Cleveland.—p. 753.
Michigan's Department of Health. G. L. Kiefer, Lansing.—p. 757.

Effect of Vagal Pressure on Cardiac Rate and Rhythm.—Of the 160 cases in which pressure was used by Wilson on the right vagus, the rate was slowed in fifty-seven. In nineteen, the rate was increased, while in eighty-four there was no change. With pressure on the left vagus, the rate was slowed in thirty-six cases, it was increased in six, and there was no change in forty-six. No change was apparent in either side in sixteen of these cases. A consideration of the effect of vagal pressure on both sides revealed that the rate was slowed by right vagal pressure in twenty-one and by pressure on the left vagus in thirty-five. With pressure on either, the ventricular rate was slowed in fourteen cases. Cardiac standstill was produced in five cases; in two of these cases only right vagal pressure was tried. Left vagal pressure was effective in two cases and right vagal pressure in three cases, pressure being tried in three cases on both sides.

Hereditary Factors in Epilepsy.—Green endeavored to ascertain the occurrence of insanity, feeblemindedness and epilepsy in the grandparents, parents, siblings and collaterals in 1,000 epileptic persons. Such factors as migraine, alcoholism and fainting spells were included, this being limited to parents and grandparents, however. Of the 1,000 cases reviewed, 443 gave evidence of the existence of one or more of the factors enumerated. In the 443 families represented, epilepsy in the relatives occurred 288 times, with the following distribution: 19 fathers, 24 mothers, 24 grandfathers, 25 grandmothers, 83 siblings and 113 collaterals (uncles, aunts and cousins). There were thirteen epileptic sons and nine epileptic daughters from epileptic fathers, and ten epileptic sons and seventeen epileptic daughters of epileptic mothers. In this group there were no cases in which both parents were epileptic. Feeblemindedness occurred among the parents of these epileptic persons more often than did epilepsy, being present fifteen times among the fathers, forty-four times among the mothers, thirty-six times among the grandparents and 180 times among the siblings and collaterals, the total occurrence being 275. Insanity occurred 202 times among the ancestry of 443 epileptic persons. These studies tend to show the possibility of mental impairment among the offspring from the mating of alcoholic and neurotic parents. Alcoholism was noted 112 times among the parents and seventy-four times among the grandparents, a total of 186 instances in 443 cases. Migraine appeared seventy-seven times among the parents and sixteen times among the grandparents. There were 463 cases of "fainting spells" among the ancestry of the 443 epileptic cases. The data relating to the occurrence of outbursts of temper were too indefinite to be of value.

Military Surgeon, Washington, D. C.

65: 781-944 (Dec.) 1929

Research-Development of Medical Field Equipment. J. P. Fletcher.—p. 814.
Military Medicine from International Aspect. G. E. Seaman.—p. 842.
Edward Jenner and Discovery of Smallpox Vaccination. L. H. Roddis. —p. 844.
How Medical Department Secured Rank in Army. L. C. Duncan.—p. 870.

Minnesota Medicine, St. Paul

12: 731-818 (Dec.) 1929

Recognition and Treatment of Renal Lithiasis. A. L. Chute, Boston.—p. 731.
Surgical Technic in Treatment of Urinary Lithiasis. G. J. Thomas, Minneapolis.—p. 740.
Perversions of Function of Diaphragm. G. P. Muller, Philadelphia.—p. 742.
*Hernia of Diaphragm Through Esophageal Hiatus; Nineteen Cases. W. H. Ude and L. G. Rigler, Minneapolis.—p. 751.
*Afferent Nerve Supply of Blood Vessels. M. E. Knapp, Minneapolis.—p. 759.
Blood Transfusion: 150 Cases. H. E. Hullsiek, St. Paul.—p. 767.
Medical Reserve. G. A. Skinner, Fort Omaha, Neb.—p. 773.
Multiple Sclerosis. L. H. Ziegler, Rochester, Minn.—p. 778.
Primary Bilateral Adenocarcinoma of Breast: Case. H. D. Caylor and V. C. Hunt, Rochester, Minn.—p. 784.
Large Infected Solitary Cyst of Kidney: Case. H. B. Sweetser, Minneapolis.—p. 786.
Pernicious Anemia in Boy Aged Eleven: Case. P. F. Eckman and O. W. Rowe, Duluth, Minn.—p. 788.

Hernia of Diaphragm Through Esophageal Hiatus.—Ude and Rigler are of the opinion that this type of hernia is a comparatively common condition, and that it is far more frequent in occurrence than all other types of diaphragmatic hernia. Hiatus hernia is rarely diagnosed clinically. The symptoms are usually vague, and often point toward other types of pathologic change. Roentgenologic examination is the usual method of establishing this diagnosis. A careful fluoroscopic study with the aid of an opaque meal must be made. The patient must be examined in various positions, as use of only the vertical position will frequently result in the overlooking of this condition. Hiatus hernia must be differentiated from (*a*) eventration of the left dome of the diaphragm, (*b*) esophageal diverticulum, (*c*) para-esophageal diverticulum of the diaphragm, (*d*) diverticulum of the cardia of the stomach, (*e*) relaxation of the cardiac orifice of the stomach with dilatation of the subphrenic

portion of the esophagus, and (*f*) tortuosity and dilatation of the esophagus produced by elevation of the diaphragm due to increased intra-abdominal pressure. The differentiation rests entirely on the roentgenologic observations.

Afferent Nerve Supply of Blood Vessels.—Knapp describes a piece of apparatus which he devised and used in this study made on dogs. A rubber balloon is inserted into the vessel for the purpose of noting variations in blood pressure that might result from irritation of the vessel wall from within. None of the vessels studied except the carotid artery gave any reflex change of blood pressure, and the carotid itself gave a response only when stimulated in a circumscribed region; hence it seems probable from these experiments that the larger blood vessels, as a whole, do not have sensory nerves which respond to changes of pressure within their lumen by reflex changes of blood pressure. It might be that there are other responsive regions like the carotid sinus, but they have never been demonstrated. These experiments, however, have dealt only with increase of pressure within the vessels. The opposite process, decrease of pressure, or collapse of the vessel walls, has not been studied as yet. It is evident that this mechanism has some function in the maintenance of normal blood pressure. It may also be of importance in abnormal conditions of the vascular system, either of hypertension or of hypotension. The sudden fall of arterial blood pressure due to stimulation of nerves in the region of the carotid artery suggests a possible relationship of this mechanism to the production of some type of reflex shock. It can be assumed that the blood vessels studied (except the carotid artery) have no afferent nerves susceptible of being stimulated by increased pressure from within, which carry impulses affecting blood pressure.

Missouri State M. Assn. Journal, Fulton

26: 533-578 (Nov.) 1929

Modern Treatment of Fractures. P. D. Wilson, Boston.—p. 533.
Fractures of Upper Extremity. R. L. Diveley, Kansas City.—p. 539.
Fractures of Lower Extremity. H. L. Hess, Kansas City.—p. 544.
*Roentgen Rays and Radium in Treatment of Malignant Disease. L. R. Sante, St. Louis.—p. 547.
*Recording Sphygmomanometer. G. H. Hoxie, Kansas City.—p. 551.
Multiple Tuberculous Lesions of Bone in Adults. G. E. Nesche, St. Louis.—p. 555.
*Bone Changes in Sickle Cell Anemia: Similar Changes Observed in Skulls of Ancient Mayan Indians. S. Moore, St. Louis.—p. 561.

Roentgen Rays and Radium in Treatment of Malignant Disease.—Sante states that irradiation evidently is not the ideal method of treating cancer; yet irradiation serves its purpose for the time being, since it offers the only hope of cure in many cases inaccessible to other methods of treatment.

Recording Sphygmomanometer.—Hoxie's experience with this instrument in making about two thousand records has convinced him of its value. The graph tends to give greater accuracy than the stethoscope.

Bone Changes in Sickle Cell Anemia.—Radiologic examination of the skeleton in the case reported by Moore revealed marked thickening of both parietal bones. The total thickness of this portion of the skull was 100 per cent greater than the remainder of the calvarium. This change seemed to be confined to the diploe; the inner table was present and unaffected but the outer was not defined. The thickened zone had a peculiar and striking structure, with dark radiating lines extending outward, perpendicular to the bone surface and producing an appearance unlike that in any other condition found in the skull. The suture lines of the vault were poorly marked and there was almost complete union of the coronal. Except for the parietal bone, the skull and the bones of the face were not affected as far as could be demonstrated by roentgen examination. The long bones of the hand and the radius and ulna on each side showed great decrease in the width of the medullary cavity. A possible similar slight change was present in each humerus but was not well marked. There was no enlargement of the involved tubular bones, and the medullary space was diminished because of increase of the cortical bone, which encroaches on the marrow cavity. In the case of the second row of phalanges of the fingers there was complete obliteration of the medullary cavities. Changes similar to those in the hands were observed in the metatarsals and phalanges of the toes, but the bones of the leg were uninvolved. The cancellous portions of the long bones were unchanged. The remainder of the skeleton was of normal radiographic appearance.

New Jersey M. Soc. Journal, Orange

26: 711-804 (Nov.) 1929

Symposium on Pulmonary Diseases. S. B. English, Glen Gardner.—p. 711.
Tuberculosis in Infancy and Childhood. B. S. Pollak, Newark.—p. 719.
Modern Treatment of Tuberculosis: Rest. H. R. M. Landis, Philadelphia.—p. 723.
Relapsing in Tuberculosis. M. H. Collier, Lakeland.—p. 727.
Differential Diagnosis of Pulmonary Diseases. J. Lloyd, Rochester, N. Y.—p. 731.
Ideals and Standards in Children's Hospital Practice. E. C. Jackson, Newark.—p. 736.
Value of Common Laboratory Procedures in Diseases of Infants and Children. R. Paddock, Newark.—p. 745.
Relative Importance of Fitting of Glasses in Ophthalmic Practice. S. E. Pendexter, East Orange.—p. 748.
Importance of Cycloplegia in Fitting of Glasses. L. F. Appleman, Philadelphia.—p. 751.
Fitting Glasses from Optician's Standpoint. J. C. Reiss, New York.—p. 758.

New Orleans M. & Surg. Journal

82: 195-256 (Oct.) 1929

Forgotten Doctor. W. A. Dearman, Gulfport, Miss.—p. 195.
Lye Stricture of Esophagus. D. C. Montgomery, Greenville, Miss.—p. 197.
Early Diagnosis and Treatment of Carcinoma of Uterus. H. Schmitz, Chicago.—p. 202.
Endometrial Transplants. J. A. Landford, New Orleans.—p. 209.
Sterility. W. E. Levy, New Orleans.—p. 214.
Syphilis of Lung. H. L. Cockerham, Gunnison, Miss.—p. 218.
Incidence of Infection with Endameba Histolytica in Louisiana as Determined by Comparative Microscopic and Cultural Methods. F. M. Johns and C. J. Tripoli, New Orleans.—p. 224.
Early Diagnosis of Intestinal Obstruction. D. L. Hirsch, Monroe, La.—p. 227.
Early Symptoms and Treatment of Cretinism. G. Y. Gillespie, Jr., Greenwood, Miss.—p. 231.
Toxic Goiter. C. W. Allen, New Orleans.—p. 238.

82: 257-332 (Nov.) 1929

Physician and Patient: Reciprocal Relations. A. Ochsner, New Orleans.—p. 257.
State Association and Public Health Program. C. C. Applewhite, Jackson, Miss.—p. 262.
Chancre. J. G. Pratt, New Orleans.—p. 266.
Splanchnic Analgesia. E. L. Irwin, New Orleans.—p. 272.
Acute Pelvic Infections in Female. A. G. Payne, Greenville, Miss.—p. 276.
Simple Glaucoma: Early Recognition a Preventive of Blindness. L. S. Gaudet, Natchez, Miss.—p. 282.
Nasal Surgery on Allergic Patients. B. S. Guyton, Oxford, Miss.—p. 287.
Maxillary Sinusitis. E. H. Jones, Vicksburg, Miss.—p. 294.
Nonspecific Diarrheas. R. G. Douglas, Shreveport, La.—p. 300.
Epilepsy and Epileptoid Conditions. E. M. Connely, New Orleans—p. 307.
Recent Revelations Concerning Rickets. R. A. Strong, New Orleans.—p. 312

New York State J. of Medicine, New York

29: 1433-1496 (Dec. 1) 1929

Graduate Fortnight of New York Academy of Medicine. F. P. Reynolds, New York.—p. 1433.
Diphtheria Prevention in Niagara Falls. E. E. Gillick, Niagara Falls.—p. 1441.
William Beaumont Memorial. F. Overton, Patchogue.—p. 1444.
Changes in Medical Economics During Past Twenty Years. W. W. Britt, Tonawanda.—p. 1446.
Medical History of Palestine. L. Colegrove, Elmira.—p. 1447.
Symptomatic Endocrine Therapy for Insanity. S. Block, New York.—p. 1450.
Golden Age in Public Health Work. W. A. Groat, Syracuse.—p. 1452.
Management of Infected Abortions. J. E. King, Buffalo.—p. 1457.
*Seesaw as Therapeutic Agent in Cerebral Arterial Sclerosis. A. H. Terry, Jr., New York.—p. 1459.
*Early Gangrene Due to Oxalic Acid Immersion: Case. M. Grolnick, New York.—p. 1461.
Treatment of Ringworm Infections of Hands and Feet. F. Wise, New York.—p. 1461.
Periodic Health Examination. C. W. Crampton, New York.—p. 1464.

Seesaw as Therapeutic Agent in Cerebral Arterial Sclerosis.—In making use of the seesaw in these cases, Terry gives exercises to the patient in the same way as the Buerger exercises for the legs but not at such extreme angulation. 1. The head is lowered from 10 to 15 degrees for about two minutes. 2. The body is on a level for two or three minutes.

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3. The head is elevated from 10 to 15 degrees for two or three minutes. By these treatments the brachial blood pressure is raised from 10 to 15 mm. of mercury when the head is down, and lowered from 10 to 15 mm. when the head is up. Shortly after each one of the treatments there is frequently an improvement in the cerebral circulation. This is manifested in a symptomatic manner by the patient being relieved of a certain amount of confusion and headache, and objectively it is noted that the color is improved and the mental condition is improved.

Early Gangrene Due to Oxalic Acid Immersion.—Grolnick relates the case of a painter who had been scrubbing floors with a solution of oxalic acid for two years at infrequent intervals, and for only a short period of time, in the course of his regular painting jobs. However, during the two previous months he had devoted to it as much as twelve or fifteen hours a week. Furthermore, he had never adopted the protection of rubber gloves. On the day before he consulted Grolnick, soon after one of these floor washings, the patient noticed a drawing pain under the nails of the fingers of both hands. Later the fingers became stiff, so that he was able to flex them only with difficulty. During the night the pain became so severe as to cause insomnia. The complaints were more marked in the right hand. The right hand showed a deep cyanosis from the finger tips to beyond the wrist. The color was not uniform but presented a mottled appearance, with areas of lesser cyanosis. The nails were yellow, exhibiting none of the normal pink hue. The soft tissues of the hand, particularly the terminal phalanges, were very tense. There was only slight ability to flex the fingers. The hand felt cold to touch, and sensation was numbed. The left hand gave a mottled appearance of blue and pink, interspersed. The tissues were less tense, sensation was present, and moderate flexion of the fingers was possible. Grolnick considered the case one of early gangrene, especially of the skin, due to immersion in the caustic oxalic acid solution, the effect probably being similar to that produced by continued local applications of strong phenol solutions. He prescribed hot epsom salt baths, dry heat, and woolen wrappings around the hands. The next day the patient stated that the pain was nearly gone. He was able to move the fingers on the left hand freely, and had about 50 per cent flexion in the fingers of the right hand. In a few more days he had no more discomfort and returned to work.

Ohio State M. Journal, Columbus

25: 953-1024 (Dec. 1) 1929

Abscess of Lung: Eighteen Cases. H. V. Paryzek Cleveland.—p. 957.
Pathologic Dislocations of Hip. W. A. Hoyt, Akron.—p. 962.
Analgesia and Anesthesia During Labor. T. Miller, Cleveland.—p. 966.
*Meningitis: Rôle of Pacchionian Bodies. J. F. Bateman, Cincinnati.—p. 970.
Albee Operation in Treatment of Pott's Disease of Spine: Two Cases. G. W. Miller and H. E. LeFever, Columbus.—p. 977.

Meningitis: Rôle of Pacchionian Bodies.—Bateman has made a study of the pacchionian bodies of 1,131 brains: four cats, fifteen dogs, six of which were fetal, sixteen white rats, ten rabbits, thirty-two sheep, six human (fetal), three infants, 145 normal adults, 152 epileptic patients and 748 insane. Of the human material examined there were 108 brains which showed in various degrees some exudative process of the meninges. As a result of this study Bateman is convinced that the pacchionian bodies play an important part in the circulation of the cerebrospinal fluid. It matters not the origin of the inflammatory process or the foci of infection, the prognosis of the case depends solely on how well the infection is returned to the blood stream through the pacchionian bodies. In every case of leptomeningitis studied, whether unilateral and localized or bilateral and diffuse, the exudate was formed in the subarachnoid space, with the greatest deposit near the pacchionian bodies. Rupture of the pacchionian bodies with escape of cerebrospinal fluid or exudate into the subdural space is a common finding. This may lead to a purulent or hemorrhagic pachymeningitis interna. The treatment for a localized or diffuse purulent leptomeningitis should be the same as for frank pus anywhere else in the body. Drainage should be established over the cortex of the brain. Examination of the cerebrospinal fluid from the lumbar sac is of no clinical value except in far advanced and diffuse exudative processes. When the inflammation is generalized, one may resort to specific serum treatment unless the original foci is found, and drainage established. In a great many instances lumbar drainage causes a localized process to become diffuse, thus preventing the proper surgical treatment. The pressure symptoms in meningitis, in all probability, result from the improper escape of cerebrospinal fluid into the blood stream rather than from the hypersecretory activity of the choroid plexus.

Philippine Islands M. Assn. Journal, Manila

9: 347-384 (Oct.) 1929

*Histopathology of Leprosy Under Local Infiltration. J. O. Nolasco.—p. 347.
Plantar and Palmar Manifestation in Leprosy. F. Eubanas.—p. 358.

Histopathology of Leprosy Under Local Infiltration.—Nolasco made a histologic study of the changes in leprotic lesions following their infiltration with the mixed ethyl ester of *Hydnocarpus wightiana* oil, 0.5 per cent iodine. Three lots of tissue from eleven patients were studied; one lot after the months of the infiltration treatment and the other two after one and four or five injections, respectively. All the patients had previously been given intramuscular injections for periods ranging from ten weeks to eighty-eight months. Before the infiltration treatment was begun two apparently similar lesions were selected and one was treated, the other being kept as a clinical control. Intramuscular injections (from 2 to 3 cc. a week) were also given during the course of the local treatment, during which time there was little change in the appearance of the lesions that were not infiltrated. The number of infiltrations given varied from seventeen to thirty-two. In the lesions treated for ten months the amount of leprous tissue was markedly reduced. The fact that although intramuscular injections were also given the untreated lesions remained clinically unchanged or only slightly improved, whereas the treated ones subsided markedly, indicates clearly a local favorable effect of this method of therapy.

Public Health Reports, Washington, D. C.

44: 2847-2912 (Nov. 22) 1929

Public Health Organization and Administration in Hamburg, Germany. J. G. Townsend.—p. 2847.
Natural Purification in Polluted Waters: III. Relation Between Food Concentration in Liquid Media and Bacterial Growth. C. T. Butterfield.—p. 2865.

44: 2913-2970 (Nov. 29) 1929

Results of Trachoma Work by Indian Service in Arizona and New Mexico. H. J. Warner.—p. 2913.

Southwestern Medicine, Phoenix, Ariz.

13: 475-522 (Nov.) 1929

Tuberculous Lesions in Chest in Childhood. J. A. Myers, Minneapolis.—p. 475.
Prevention of Tuberculosis. J. W. Flinn, Prescott, Ariz.—p. 482.
Heliotherapy in Treatment of Extrapulmonary Tuberculosis. F. C. Goodwin, El Paso, Texas.—p. 485.
Treatment of Fractures. J. E. Bacon, Miami, Ariz.—p. 488.
Functional Manic-Depressive Psychoses. H. A. LaMoure, Pueblo, Colo.—p. 491.
Management of Heart Failure and Dropsy. G. Werley, El Paso, Texas.—p. 495.
Advance of Orthopedic and Traumatic Surgery. J. M. Greer, Phoenix, Ariz.—p. 498.
Immunization of School Children. R. J. Stroud, Phoenix, Ariz.—p. 501.
Venereal Disease Among Navahos. R. H. Pousma, Rehoboth, N. M.—p. 503.
Fractures of Pelvis. E. J. Cummins, El Paso, Texas.—p. 505.
Bronchoscope: Four Cases. W. E. Vandevere, El Paso, Texas.—p. 506.
Ice Pack or Collar Contraindicated Following Tonsillectomy. F. L. Reese, Phoenix, Ariz.—p. 506.
Vincent's Angina Infection of Vagina: Neuroretinitis: Blindness: Cure. O. H. Brown and L. C. Barlow, Phoenix, Ariz.—p. 507.

Tennessee State M. Assn. Journal, Nashville

22: 233-270 (Nov.) 1929

Use and Abuse of Endocrine Therapy on Children. E. C. Mitchell, Memphis.—p. 233.
Surgical Treatment of Pulmonary Tuberculosis. I. A. Bigger, Nashville.—p. 240.
Roentgen Ray in Diagnosis of Renal Calculi. J. M. Frere, Chattanooga.—p. 244.
Compound Fractures. H. G. Hill and J. Penn, Memphis.—p. 249.
Two Case Reports with Autopsy Findings: 1. Cockle-Bur in Bronchus. 2. Cardiospasm. R. McKinney, Memphis.—p. 254.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Lancet, London

2: 1075-1128 (Nov. 23) 1929

*Surgery of Gallbladder and Bile Ducts. R. P. Rowlands.—p. 1075.
Sulfosin Treatment of General Paralysis and Other Disorders. K. Schroeder.—p. 1081.
Puncture of Chest: Occasions and Technic. F. G. Chandler.—p. 1084.
*Influence of Liver Treatment on Mortality from Pernicious Anemia. P. L. McKinlay.—p. 1086.
Hereditary Contracture of Little Fingers (Kamptodactyly): Case. A. H. Todd.—p. 1088.
Value of Irradiated Milk Compared with Cod Liver Oil as Source of Vitamin D. K. H. Coward.—p. 1090.
Empyema with Perforation of Bronchus and Partial Pneumothorax: Case. G. Jessel.—p. 1090.

Surgery of Gallbladder and Bile Ducts.—Rowlands concludes his discussion of this subject by stating that infective inflammation of the gallbladder is very common and is difficult to cure medically. It often causes gallstones, and sometimes cancer, to form in the gallbladder. Timely radical operation has a low mortality and offers a good chance of cure. Delay often leads to serious and dangerous consequences. The results of operations on the gallbladder and bile ducts are extremely satisfactory and compare favorably with those obtained in any other branch of surgery.

Influence of Liver Treatment on Mortality from Pernicious Anemia.—McKinlay analyzes the mortality returns of pernicious anemia in England and Wales. For the six years immediately preceding the introduction of the liver treatment of this disease, the rates of mortality in both sexes pursued a course which was practically horizontal, the age and sex distributions of the deaths at the same time showing no important changes. In 1927 there was a slight tendency toward improvement apparent in males and affecting particularly the returns of the last three months of the year; but, taken in conjunction with the observations of the mortality among females, it may fairly be said that the evidence of significant change which can be derived from these statistics is not at all convincing. In the succeeding year a definite decline in mortality took place —a reduction of some 915 deaths over expectancy, affecting both sexes, limited chiefly to young adult and middle ages, beginning early in the year and consistently increasing toward its close; greater in London than elsewhere and occurring in the absence, so far as is at present known, of change in any factor liable to affect the course of mortality other than the method of treatment. The whole of the evidence is consistent with the view of causal association between the two factors and, judging from the course of mortality in the comparatively short period since the institution of specific therapy, it would seem safe to predict that extension of the treatment to a still larger proportion of patients suffering from the disease will be reflected in further decline in the mortality attributed to this cause.

Medical J. of Australia, Sydney

2: 660-694 (Nov. 9) 1929

Occurrence of Lead in Egg of Domestic Hen. W. B. S. Bishop.—p. 660.
Application of Pathogen-Selective Methods of Culture in Investigation of Foci of Infection in Arthritis. C. H. Shearman.—p. 662.
*Principles Underlying Diagnosis and Treatment of Focal Infections in Relation to Arthritis. R. V. Graham.—p. 665.
Toxicology of Arum Lily and Cunjevoi Lily. J. MacPherson.—p. 671.
Olla Podrida. W. J. L. Duncan.—p. 674.
Early Endometriotic Invasion of Sigmoid. J. B. Dawson.—p. 676.

Principles Underlying Diagnosis and Treatment of Focal Infections in Relation to Arthritis.—Graham feels that some traumas of fibrous tissue produce their characteristic effects by assisting circulating organisms to localize in that tissue. It is impossible in the present state of knowledge to say positively from roentgen examination that a given tooth is or is not an active source of focal sepsis. Teeth showing osteosclerosis without rarefaction and vice versa have yielded streptococci growing on the patient's whole blood. The mere presence of an organism in a focus does not warrant the assumption that it is pathogenic for that patient. Pathogen-selective cultures are of value as an aid to diagnosis of the activity of a given focus. Patients are very sensitive to such vaccines and only small desensitizing doses should be given. The calcium metabolism shows definite and characteristic changes in these infections. Vaccines prepared from positive cultures on patients' whole blood have been of value in treatment after eliminating the primary focus. The pathogen-selective method is worthy of trial in other conditions attributed to focal infection. Early treatment is necessary in order to avoid formation of osteophytes and fibrous tissue. Since it is believed that there is a deprivation of calcium in these chronic infections, every effort should be made to promote calcium retention. The sodium and potassium salts of inorganic acids, such as malic and citric acid contained in leaves, roots, tubers and fleshy fruits, are particularly valuable. Sodium citrate in milk assists the infant to retain calcium. If drug treatment is required, sodium-calcium lactate is of greatest value. Calcium chloride in large doses causes acidosis. Proteins and fat should be limited, if there is deficient calcium retention; carbohydrates should also be restricted in those cases exhibiting a lowered sugar tolerance. Massage, diathermy and ultraviolet radiation have a place in the treatment of these infections. In severe and prolonged cases of arthritis in which permanent changes have taken place, much relief follows sympathectomy.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

53: 1021-1159 (July 22) 1929. Partial Index

*Osteomalacia: Radium Therapy of Ovaries. O. Crouzon and L. Justin-Besançon.—p. 1037.
Icterohemorrhagic Spirochetosis. Brulé and Stéhelin.—p. 1043.
*Pyretotherapy with Brewers' Yeast in Paretic Patients. C. I. Urechia and S. Mihalescu.—p. 1052.
*Cerebrospinal Meningitis Caused by Meningococci: Treatment by Injections of Acriflavine Hydrochloride. J. A. Chavany, A. Arnaudet and J. Gailhard.—p. 1056.
*Pneumococcic Septicemia in Patient with Chronic Nephritis. L. de Gennes, R. Boulin and M. Thomas.—p. 1079.
*Multiple Cerebral Thromboses as Complication of Pneumonia. F. de Massary and Y. Boquien.—p. 1100.
*Caramelized Sugars in Diet of Diabetic Patients. M. Labbé, R. Boulin and Gilbert-Dreyfus.—p. 1115.

Osteomalacia: Radium Therapy of Ovaries. — From a consideration of the case history of a patient, aged 42, who had severe pain and disturbances in her general condition due to osteomalacia, Crouzon and Justin-Besançon conclude that osteomalacia caused by vitamin D deficiency may be distinguished from processes of bone disintegration connected with endocrine disturbances. In their case the calcium content of the blood was normal. Relief of the condition with complete inhibition of the osteomalacia, though without modification of the preexisting lesions, was brought about by radium irradiation of the ovaries for five months.

Pyretotherapy with Brewers' Yeast in Paretic Patients. —Urechia and Mihalescu report the results of this treatment of 233 patients over a period of five years. Nineteen were cured, in eighty-two the condition was improved, fifty-three remained without showing any change and sixty-nine died. Thus, 8.58 per cent were reported cured and 36.7 per cent improved. Patients who were not completely cured showed a tendency toward recurrence. The treatment consisted of injections of a freshly prepared 1 per cent emulsion of the regular commercial yeast in distilled water. From 0.3 to 0.5 cc. is injected intravenously; in some patients up to 3 cc. is needed to produce a rise of temperature from 40 to 41 C. (104 to 105.8 F.). In some patients, diarrhea occurred. As many as eight or ten such periods are initiated with sometimes from fifteen to eighteen injections. Arsphenamine may be given in the same syringe, or it is administered during the period of fever. Urechia and Mihalescu state that they never noted complications with this method of treatment, if contraindications, such as myocarditis, are heeded. They have also applied this method with success in neuralgia, subacute rheumatism and gonorrhea.

Cerebrospinal Meningitis Caused by Meningococci: Treatment by Injections of Acriflavine Hydrochloride.—Chavany et al. relate the case of a woman, aged 24, who was suddenly stricken with a general feeling of illness coincident with a rise of temperature. Her condition became rapidly worse with vomiting, severe headache and a stiffness at the nape of her neck. She did not have any treatment at home and three days later was admitted to the clinic. Her past his-

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tory was negative, but her condition warranted the withdrawal of 15 cc. of cerebrospinal fluid for examination. The fluid was under increased tension and was markedly turbid. On microscopic examination, modified polymorphonuclear leukocytes but no bacteria were seen. A culture of the fluid, however, showed a growth of type A meningococci. Immediately after the withdrawal of the fluid, 3 cc. of a 1:50,000 solution of acriflavine hydrochloride was injected. This was tolerated without a reaction, whereupon 5 cc. of a 2 per cent solution of the preparation was given intravenously. Next day the cerebrospinal fluid was again withdrawn and acriflavine hydrochloride solution injected. This treatment was repeated daily for one week with dilutions of from 1:5,000 to 1:50,000. The patient recovered slowly and a culture of the cerebrospinal fluid remained sterile.

Pneumococcic Septicemia in Patient with Chronic Nephritis.—A clinical presentation of an unusual set of symptoms occurring in a youth, aged 18, is made by de Gennes et al. A year and a half previously, after an apparently uncomplicated cold, edema of the ankles, thighs, hips and face was noted, coincident with a considerable amount of albumin in the urine. After a period of enforced rest and a chloride-free diet the edema receded, but the albuminuria persisted. From 4 to 15 Gm. of albumin was excreted daily. Examination of the patient after his admission to the clinic showed that he had a chronic nephritis with chloruremia, albuminuria and an increased excretion of urea. The other organs appeared to be normal. Within several days after his admission to the clinic (after dieting the edema again receded as did the slight abdominal symptoms of ascites) he lost 5 Kg. (11 pounds) and the amount of albumin in the urine dropped from 10 to 6 Gm. One week after his admission, vomiting with an abrupt rise of temperature and hematuria occurred. Over the base of the right lung a slight focus of pulmonary involvement was found. A blood culture showed numerous gram-positive diplococci, culturally and morphologically resembling pneumococci. One day later, an erysipelatous erythema appeared, which rapidly extended over the abdomen and the thighs. His general condition was serious, with persistent delirium and high temperature. The following days, however, the temperature dropped and the urine was again clear and increased in amount. However, pains in the abdomen, vomiting and diarrhea occurred, coincident with a retention of urine necessitating catheterization. After four days, however, diuresis with from 3 to 4 liters of urine was noted. The urine was purulent and examination showed that it contained an emulsion of pneumococci but no leukocytes. Inoculation with this urine killed a mouse within twenty-four hours. The bacteriuria without pyuria persisted for several days, with the temperature gradually returning to normal. Several small abscesses containing pneumococci appeared on both legs. Elimination of bacteria by way of the urine continued for another week. Gradually the patient recovered; cultures of blood and urine remained sterile, although there were two periods of recurrence of the symptoms after two small abscesses had reappeared. The pyuria persisted although the patient was otherwise well. De Gennes et al. consider this case of especial interest in view of the comparative integrity of the kidney functioning in spite of the intensity of the bacterial infection and the preexisting nephritis.

Multiple Cerebral Thromboses as Complication of Pneumonia.—De Massary and Boquien report this occurrence in a patient, aged 27, who was suffering from pneumonia. He had already passed the crisis and seemed on the way to recovery, when his temperature suddenly rose. Symptoms of diffuse pyramidal irritation were noted. Spinal puncture showed a normal cerebrospinal fluid, which contained no cellular elements and 0.15 Gm. of albumin. The patient died in the afternoon of the same day. Necropsy showed a typical focus of hepatization at the base of the right lung; the heart and the abdominal organs were in perfect condition. In the brain, however, the following changes were noted: The left hemisphere contained a small red focus of softening and showed a blotched aspect of the gray nuclei. In sections of the right hemisphere the perisylvian convolutions were friable and the meninges were adherent to the brain. The white matter was vascularized and hemorrhagic. A large portion of the right middle cerebral artery was thrombosed and microscopic examination showed that it contained a fibrinous clot with many polymorphonuclears; the walls appeared to be intact. According to de Massary and Boquien the rapid fatal evolution in this case may have been caused by the extent of the thrombosis, the bilateral involvement and the double obstruction of the circulation from the venous and arterial thromboses.

Caramelized Sugars in Diet of Diabetic Patients.—Labbé et al. discuss the literature and state, on the basis of their experiments in seven cases of diabetes, that caramelization of sugars does not change them to the extent that they modify the glycemia or glycosuria in diabetes. Caramelized sugar has no advantage over the carbohydrates usually prescribed in the diet of diabetic patients.

Revue de Chirurgie, Paris

67: 323-374, 1929

*Stellate Ganglion as Reflex Center in Visceral Syndromes. R. Leriche and R. Fontaine.—p. 323.
*Inefficacy of Balfour's Operation in Surgery of Stomach. A. Charrier and J. Villar.—p. 333.
Diagnosis of Appendicitis Through Pain on Pressure. G. Koerbler.—p. 347.
Fractures of Calcaneum: Surgical Treatment. R. Simon and E. Stulz.—p. 354.

Stellate Ganglion as Reflex Center in Visceral Syndromes.—Leriche and Fontaine report observations of three more patients. In one patient a typical attack of angina pectoris was provoked by irritation of the stellate ganglion with a galvanic current during an operation. In two others an attack during an operation was inhibited by the injection of a solution of procaine hydrochloride into the ganglion. The new symptoms on record were observed on occasion of the routine injection of the anesthetic into the sympathetic nerve before operation, for the purpose of determining the extent of the proposed sympathectomy. One patient, a man, about 50 years of age, had been operated on several times in the course of two years, for the purpose of relieving a painful syndrome in his left arm. The communicating branches of the stellate ganglion were divided and the superior cervical ganglion and the intermediary ganglion were resected. The condition of the patient was satisfactory for several months, when pain in the fingers of his left hand was noted. Before another operation was decided on, the stellate ganglion was infiltrated with a solution of procaine hydrochloride and epinephrine. The injection was barely completed when symptoms of an acute crisis of angina pectoris appeared; the respiration was difficult and a dry cough occurred with expectoration of the type seen in pulmonary edema. The patient recovered after one hour from this attack, but it was only after several days that his condition was again normal, and he remained free from pain for several months. A second patient, aged 43, had been suffering daily from several attacks of angina pectoris. Before operation, paravertebral infiltration anesthesia with a 1 per cent solution of procaine hydrochloride was made. Immediately he had a most intense attack; however, for several days he remained free from attacks. The last observation was similar. The patient was 42 years of age. (Her case history was reported in the *Strasbourg médical* **89**:61-65 [Feb. 5] 1929.) Infiltration anesthesia in the region of the left stellate ganglion initiated a typical syndrome of angina pectoris and asthmatic dyspnea. But likewise, in both these patients, symptoms of angina pectoris disappeared for several months. On the basis of their experience and a review of the literature, Leriche and Fontaine believe that the rôle of the stellate ganglion as a reflex center in angina pectoris and possibly in other syndromes pertaining to the heart and lungs is established.

Inefficacy of Balfour's Operation in Surgery of Stomach.—On the basis of their personal experience in eight cases and a review of the literature, Charrier and Villar state that Balfour's method of thermocauterization of a gastric ulcer and burying it by means of a purse-string suture, without doing a complementary gastro-entero-anastomosis, does not give permanent or satisfactory results. Four of their patients submitted to a second operation and in each instance a large inflamed area of reaction was observed. Charrier and Villar point to the intricacy and danger of the operation. They prefer gastro-enterostomy alone to gastro-enterostomy combined with

Balfour's operation. They state that, in cases in which gastropylorectomy is contraindicated, gastro-enterostomy should be done, but that at present there is no place for Balfour's operation in gastroduodenal surgery.

Schweizerische medizinische Wochenschrift, Basel

59: 1073-1096 (Oct. 26) 1929

Medicinal or Physical Therapy? K. von Neergaard.—p. 1073.
Methods for Testing Visual Acuity. J. Strebel.—p. 1077.
*Acute Yellow Atrophy of Liver Caused by Acetylene Tetrachloride. W. Schibler.—p. 1079.
Unrecognized Maxillary Sinusitis. P. H. Rossier and E. F. Guggisberg. —p. 1081.
Pulmonary Gangrene of Slow Evolution. G. Humbert.—p. 1083.

Acute Yellow Atrophy of Liver Caused by Acetylene Tetrachloride.—Schibler reports cases of occupational intoxication that occurred in a shoe factory. The glue that was used contained acetylene tetrachloride. Although three cases had a fatal outcome, several other workers in the same factory developed jaundice and other disturbances, but most of them recovered. The author gives a detailed description of two of the cases in which death occurred as the result of acute yellow atrophy of the liver. The patients were young women, aged 16 and 17, respectively. Two stages were observed in the course of the disease. The prodromal stage lasted, in the first case, about six weeks; in the second instance, only one week. It was characterized by disturbances in the general condition, in the gastric and intestinal functions, with vomiting, fever and beginning icterus. During the second stage nervous symptoms became manifest, such as motor restlessness, screaming, delirium and slight convulsive movements of the arms. A slightly soporose condition gradually developed into a deep coma. The author noted in both cases a peculiar oral fetor. A severe icterus developed during the prodromal stage. A hemorrhagic diathesis in the form of epistaxis and bleeding from the mucous membrane of the lips was also noted. Babinski's reflex was present. The heart action was accelerated but the breathing was slow. The characteristic changes in the liver were proved by the diminution of the hepatic dulness and by the tympanic sound in the epigastric region. Laboratory investigations showed that the urine contained albumin, coarse granular cylinders and bile pigments. The blood was thick and showed a brownish yellow discoloration. The hemoglobin content and the number of erythrocytes and leukocytes were increased. The lymphocytes and neutrophils showed a high degree of vacuolation. The sedimentation rate was greatly retarded.

Archivio Italiano di Chirurgia, Bologna

24: 365-472 (Aug.) 1929

*Effects of Sympathectomy of Hypogastric Artery on Female Internal Genitalia. C. Chianello.—p. 365.
Modifications of Technic of Ombrédanne for Bringing Down and Fixing Ectopic Testes. G. Gianturco.—p. 389.
Isolated Fracture of Coracoid Process. L. Moriconi.—p. 395.
Cardiolysis by Brauer Method in Adhesive Mediastinopericarditis. L. Torraca.—p. 405.

Effects on Female Internal Genitalia of Sympathectomy Applied to Hypogastric Artery.—From observations in his experiments on female dogs, Chianello concludes that arterial sympathectomy accelerates the development of the ovary, and particularly of the follicular portion, in which, in comparison with that of the control side, a marked increase of follicles and a no less marked tendency to prompt maturation were observed. His results might seem to justify certain therapeutic inductions, since it seems likely that arterial sympathectomy might be of aid in cases of retarded or arrested development of the female internal genitalia; also in conditions of early senescence, and in algias that accompany various disorders of the pelvic organs.

Clinica Pediatrica, Modena

11: 995-1104 (Nov.) 1929. Partial Index

*Meningeal Reaction in Acute Anterior Poliomyelitis. G. de Simone. —p. 1034.
*Blood Changes in Early Stage of Varicella and in Paroxysmal Stage of Whooping Cough. A. Salvadei.—p. 1048.

Meningeal Reaction in Acute Anterior Poliomyelitis.—From a review of the literature and from his own observations, de Simone asserts that the presence of frequent and constant humoral reactions of the cerebrospinal fluid in acute anterior poliomyelitis is unquestionable. The modifications observed in the analysis of the fluid indicate an inflammatory condition in the meninges. The author separates the types of meningeal reactions that appear during the evolution of acute anterior poliomyelitis with typical manifestations of paralysis from the types of pure meningeal syndromes without paralysis. He reports eight cases of his own in children aged from 3 months to 4 years. In these children the changes of the cerebrospinal fluid and paralysis were observed during an epidemic of acute anterior poliomyelitis. The presence of hyperalbuminorachia, either alone or associated with hyperglobulinorachia, accompanied the cellular reaction. The meningeal symptoms were so prominent in one of the author's patients that a diagnosis of tuberculous meningitis was made at first. The correct diagnosis was made at the late appearance of paralysis. This case was regarded as an acute meningitis which ended with paralysis. The author concludes that in his cases the humoral and meningeal reactions were more or less marked but definite and constant. The cytologic reaction which appeared early in the disease was the first to disappear after a progressive diminution, whereas the globulin and albumin reactions remained longer. Albuminosis was the last to disappear.

Blood Changes in Early Stage of Varicella and in Paroxysmal Stage of Whooping Cough.—Salvadei studied the changes in the blood in sixteen children, aged from 3 to 5 years, during the initial period of varicella. Five of them were in the paroxysmal stage of whooping cough. The blood was taken from the thumb before the children breakfasted. The analysis was made twenty-four hours before the appearance of the eruption of varicella, and during the first twenty-four hours of the eruptive stage. The author concludes that varicella, either by itself or when associated with whooping cough, modifies the blood with specific characteristics. These modifications, which were more marked in the blood of patients with whooping cough, are (1) absolute leukopenia, (2) neutropenia and (3) lymphocytosis, regularly associated with an increase of the basophilic and acidophilic cells of the blood.

Semana Médica, Buenos Aires

36: 889-964 (Sept. 26) 1929

*Insufflation of Lungs in the Still-Born. N. Rojas, L. Cattaneo and A. Raitzin.—p. 889.
Premature Separation of Normally Attached Placenta. E. A. Boero and R. Schwarcz.—p. 894.
Experimental Epithelioma of Stomach and Papilloma of Esophagus in Rat. M. Beatti.—p. 898.
Chronic Diverticulitis of Sigmoid Flexure. T. Martini and C. Cardini. —p. 899.
*Results of Liver Diet in Pernicious Anemia and in Complicating Neurologic Syndrome. D. Staffieri and R. A. Giacosa.—p. 906.
Primary Chronic Appendicitis. H. J. d'Amato and C. Llambias.—p. 913.
Cervical Dystocia: Case. T. A. Chamorro and N. Dacharry.—p. 915.
Postarthritic Rigidity of Joints. L. A. Weber.—p. 917.
Cancer of Breast Associated with Diabetes Insipidus. J. Orgaz.—p. 923.
Changes in Personality. A. A. Martinez.—p. 927.
Treatment of Puerperal Eclampsia with Intravenous Injections of Magnesium Sulphate. S. E. Bermann.—p. 937.
Acute Appendicitis. D. A. Pasqualis.—p. 940.
Prostatectomy: Technic. U. Isnardi and J. J. Ratto.—p. 942.
Diagnostic Value of Steatorrhea in Diseases of Pancreas. H. Salomon. —p. 944.
Grave Peritoneal Hemorrhage Caused by Rupture of Hemorrhagic Ovarian Cyst. R. L. Masciottra.—p. 951.
A Specific Test for Insulin. L. Goldemberg.—p. 953.

Insufflation of Lungs in the Still-Born.—Rojas et al. performed necropsies on twelve fetuses, all but two of which were born at term. Death was probably caused by intra-uterine asphyxia. Only two twin brothers (born at the seventh month) lived twenty-four and thirty-six hours, respectively, and they were dyspneic. The necropsy was performed on the day of death or the following day. Insufflation was made with the lungs in situ either before or after the thorax had been opened. The authors employed a syringe of the type used for vaginal douches, which produces a pressure of from 20 to 35 cm. of mercury. The authors divided the fetuses thus into three groups. The first group consisted of those in which no distention of the lungs was obtained by insufflation. This group consisted of two fetuses that had not breathed and on which the postmortem examination was made very late. Microscopically the lungs showed the characteristics of the fetal lung. The four

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tests of pulmonary docimasia were negative; the gastric docimasia test was positive. The second group consisted of fetuses in which insufflation caused an almost complete distention of the lungs. These fetuses had breathed a little. The lungs presented the characteristics seen after respiration, but without having the uniform and spotted appearance that normal respiration causes. The four tests of pulmonary docimasia and the test of gastric docimasia were positive. The alveoli were more distended than after normal respiration and their septums frequently were ruptured. (This rupture is an important evidence of insufflation.) The third group consisted of fetuses in which a partial distention was obtained by insufflation as if it were in small areas, that is, that the lung presented in some parts the characteristics of the fetal lung, whereas in other parts it showed the characteristics of the lung after being aerated, in macroscopic, hydroscopic and microscopic examinations. This group was formed by fetuses of both groups; namely, those which had respired a little and those which had not. The authors conclude that insufflation of the lungs is of practical value. When performed forcibly and repeatedly, it may cause total distention of the lungs.

Results of Liver Diet in Pernicious Anemia and in Complicating Neurologic Syndrome.—Staffieri and Giacosa obtained good results in three patients with pernicious anemia, aged 48, 52 and 61, respectively, by the addition of 250 Gm. of liver to the diet. No intolerance to the liver was observed, notwithstanding the fact that the oldest patient had a poor digestion. The authors assert that liver therapy results in the clinical recovery of patients with pernicious anemia. The results obtained with the liver diet surpass those obtained with any treatment previously given. In the authors' cases the blood picture showed favorable modifications as early as the seventh day, and after two or three months it was almost normal. The treatment should be given indefinitely. When one of the authors' patients discontinued it, the symptoms reappeared. The authors consider the liver diet as a form of substitution opotherapy whose effects may be compared to those noted after the use of thyroid in myxedema and insulin in diabetes. It may be advisable, however, either to omit the eating of liver for a day once in a while or to diminish the portion of it, for more or less long periods, according to the individual reaction. The authors consider unnecessary the association of liver therapy with some other treatment, such as the administration of viosterol (irradiated ergosterol), the previous irradiation of the liver, blood transfusion and injections of insulin. Blood transfusion should be resorted to after liver therapy has failed and the organism has been rid of infectious foci. The authors' patients treated by liver therapy did not manifest any improvement in the neurologic syndrome associated with pernicious anemia.

Archiv für Gynäkologie, Berlin

138: 231-584 (Sept. 20) 1929

Large Cystoma of Ovary. E. Kehrer.—p. 231.
*Elasticity of Skin in Cancer. H. Guthmann and A. Erb.—p. 269.
Adenomyoma of Uterus. H. Baltzer.—p. 278.
Congenital Basal Cell Tumor of Gingiva. H. O. Kleine.—p. 297.
*Leukoplakia and Kraurosis of Vulva. E. Terruhn.—p. 318.
Vitiliginous Leukoderma of Vulva. E. Terruhn.—p. 331.
Etiology of Postclimacteric Hemorrhage. J. Schiffmann.—p. 339.
Nerve Supply of Female Genitalia. R. Dyroff.—p. 362.
Calcium Balance in Pregnancy. O. Bokelmann and A. Bock.—p. 459.
Sepsis of Genital Origin. C. Clauberg and H. Kötter.—p. 469.
Polymastia and Polythelia. H. O. Neumann and M. Oing.—p. 494.
Shock in Childbirth. A. Mandelstamm.—p. 543.
*Objective Diagnostic Signs of Pregnancy of Eight Months in Breech Presentation. B. A. Libow.—p. 558.
Paraganglionic Tissue of Ovary. J. Wallart.—p. 564.

Elasticity of Skin in Cancer.—In determinations of the elasticity of the skin in twenty healthy persons and in twenty persons with cancer, Guthmann and Erb noted a marked decrease in the elasticity of the skin in the persons with cancer. The decrease was definite even in beginning carcinomatous processes.

Relation Between Leukoplakia and Kraurosis of Vulva.—According to Terruhn, leukoplakia vulvae is not a disease entity but is only a symptom of the first stage of kraurosis vulvae.

Objective Diagnostic Signs of Pregnancy of Eight Months in Breech Presentation.—Libow states that the most valuable and most reliable signs of a pregnancy of eight months in a breech presentation are the level of the fundus of the uterus and the position of the breech with regard to the pelvic inlet.

Deutsche medizinische Wochenschrift, Berlin

55: 1825-1868 (Nov. 1) 1929

Differentiation Between Pyemia and Puerperal Sepsis. M. Martens.—p. 1825.
*Nourishment Through the Skin. H. Winternitz and H. Naumann.—p. 1828.
Cholecystography Following Oral Administration of Contrast Medium. H. Taterka.—p. 1830.
Dosage in Medication with Viosterol. M. Demant.—p. 1832.
Digestibility and Absorbability of Keratin. E. Keeser.—p. 1833.
Differential Diagnosis and Treatment in Hydrorrhea Gravidarum. E. Kehrer.—p. 1834.
Combined Treatment of Pernicious Anemia with Liver Extracts and Arsenic. H. Hollmann.—p. 1834.
Belladonna Leaves: Administration and Clinical Value. T. Brock.—p. 1836.
Generalized Urticaria Following Sting of Bee. A. Götz.—p. 1837.

Evidence that Nourishment Cannot be Absorbed by the Skin.—Winternitz and Naumann discuss the various methods for artificial nutrition. They point out that rectal, subcutaneous or intravenous administration of food supplies the body only with water and carbohydrates because proteins and fats are not absorbed by the organism when given in this manner. Stejskal advocates inunction with a nutritional preparation that contains 50 per cent of fats, 37 per cent of carbohydrates, 5 per cent of proteins and also vitamins. He asserts that with this method of application up to 1,400 calories can be absorbed by the skin. The authors, however, point out that the anatomic structure of the skin is unfavorable for the assimilation of foods. Because the skin is saturated with fats of the cholesterol type, only those substances can be absorbed which can be dissolved in these fats. On the other hand, there is the possibility that the nutritional substance is absorbed by the cutaneous glands or by the hair follicles. Intake by the surface, however, does not prove that the substance is really assimilated by the body. In order to determine whether the skin absorbs fats, the authors made various tests. They come to the conclusion that the skin is not suited for the absorption of foods and that nutrition through the skin is therefore not possible. The question whether minute quantities of fats, carbohydrates and proteins are absorbed by the skin under certain conditions is of pharmacologic and clinical interest. However, for the purpose of nutrition this route is valueless.

Klinische Wochenschrift, Berlin

8: 2033-2072 (Oct. 29) 1929

Metabolism During Bodily Exertion. E. Simonson.—p. 2033.
Relation Between Inguinal Lymphogranulomatosis and Chronic Elephantiasic Ulcer of Vulva and Anus. W. Frei.—p. 2038.
Mitral Stenosis Murmur in Conduction Disturbances. F. Schellong.—p. 2042.
*Functional Test of Islands of Langerhans: Rôle of These Structures in Pathogenesis of Adiposity. B. Aschner.—p. 2043.
*Mechanism of Reaction of Anterior Lobe of Hypophysis, with Especial Consideration of Pregnancy Reaction of Aschheim and Zondek. K. Ehrhardt.—p. 2044.
Determination of Resorption of Fat by Production of Alimentary Lipemia. H. Strauss.—p. 2047.
Simple Method for Determination of Specific Gravity, of Dry Residue and of Ash in Cerebrospinal Fluid. W. Kindler.—p. 2048.
Treatment of Inoperable Cancers with Metallic Salts. R. Herbst.—p. 2049.
*Simple Method for Blood Transfusion. W. Engel.—p. 2050.
Influence of Thymus on Growth Under Normal and Abnormal Conditions. L. Asher and P. Ratti.—p. 2051.
Numerical Distribution of Erythrocytes and Leukocytes in Peripheral Blood. J. Reichel and G. Monasterio.—p. 2051.
Influence of Sympathetic Nervous System on Mechanism of Contraction of Voluntary Muscles. L. Asher, J. Charlet and F. Labhart.—p. 2051.
Acute Thallium Poisoning. J. Deutsch.—p. 2052.
Dosage in Treatment with Ultraviolet Rays: Researches on Sensibility of Skin to Ultraviolet Rays. K. Kirschmann.—p. 2055.

Functional Test of Islands of Langerhans: Rôle of These Structures in Pathogenesis of Adiposity.—Aschner directs attention to the functional tests of the islands of Langerhans which were conducted by Depisch and Hasenöhrl (*Klin. Wchnschr.* **8:**1943 [Oct. 15] 1929). She made the same tests on twenty-nine persons. Fourteen were obese, two had diabetes, five were emaciated, four had hyperthyreosis, two had hypo-

thyreosis, one had subchronic nephritis and one had icterus catarrhalis. The patients were subjected to a dextrose tolerance test. The author investigated especially the hyperglycemia, the subsequent hypoglycemia, and the difference in the sugar content of the capillaries and of the veins before the administration of dextrose and during the period of hyperglycemia. She comes to the conclusion that the difference in the sugar content of the capillary and of the venous blood is not determined exclusively by the functioning of the islands of Langerhans, but it is also dependent on the sugar content of the tissues and on the difference between the amount of sugar in the blood and in the tissues. Consequently, the determination of the difference in the sugar content of the capillary and of the venous blood is of no value for determining the functional activity of the islands of Langerhans. Moreover, the author found only minor differences in the curves indicating the alimentary hyperglycemia in obese, normal and emaciated persons. From this she concludes that adiposity is not caused by a hyperfunctioning of the islands of Langerhans.

Mechanism of Reaction of Anterior Lobe of Hypophysis, with Especial Consideration of Pregnancy Reaction of Aschheim and Zondek.—Ehrhardt states that, in 400 cases in which the pregnancy test of Aschheim and Zondek was done, the results were correct in 98 per cent of the cases. However, the reaction requires about 100 hours for its completion. In order to determine whether the test could be completed in a shorter period and also to win a better insight into the mechanism of the reaction, the author made extensive experiments. Other authors had observed that the spleen exerts an inhibitory influence on the sexual functions. Accordingly, the author reasoned that in splenectomized animals the pregnancy could, perhaps, be completed in a shorter period. However, the results of his experiments on splenectomized animals did not confirm this supposition. The author also thought that by injecting larger quantities of urine the test animals would show the specific changes sooner. But many animals died or showed harmful effects. Experiments that were performed to determine whether the pregnancy reaction could be completed more quickly on mice that had been subjected to unilateral oophorectomy showed that in a few instances the changes occurred sooner, but the results were not the same in all animals, and consequently they were of no practical value. In another group of mice, hysterectomy was done. It was found that the total extirpation of the uterus hindered the completion of the pregnancy reaction, whereas in animals in which only a part of the uterus had been removed all the changes characteristic for the pregnancy reaction became noticeable on both ovaries. Animals which had been kept under the influence of high temperatures showed a certain degree of hypertrophy of the genitalia, and some of them died. In others the pregnancy test was performed, but the time required was about the same as in animals kept at normal temperatures. In order to determine whether the action of the hormone of the anterior lobe of the hypophysis is influenced by other internal secretions, the author implanted into the test animals parts of the pituitary body in combination with the medullary portion of the suprarenals, the cortical portion of the suprarenals, the entire suprarenals, the pancreas, the pineal body or the thyroid. Other animals were given injections with a preparation containing the hormone of the anterior lobe of the hypophysis in combination with epinephrine, pituitary extract, insulin or thyroxin. Most of the animals that had received either the implantation or the injection gave positive reactions. However, in several of them negative results were noted. Experiments with the ovarian hormone proved that this hormone hinders the action of the hormone of the anterior lobe of the hypophysis. The author also investigated whether the hormone of the anterior lobe of the hypophysis may be found in organs other than the hypophysis, placenta, decidua graviditatis, corpora lutea graviditatis and in the urine and serum of gravidas. He found that in pregnant women this hormone is also present in the acute inflammatory exudate of the cantharidal vesicle. In the cerebrospinal fluid it was detected only in cases of eclampsia. Because hormone-like substances are found also in plants, the author investigated whether any of these substances have effects similar to those produced by the hormone of the anterior lobe of the hypophysis. But all these tests gave negative results.

Simple Method for Blood Transfusion.—Engel describes an apparatus which will prevent the coagulation of blood in blood transfusion. The first signs of coagulation generally appear in the syringe, between the plunger and the wall of the cylinder. In order to avoid this, the author constructed a device which makes it possible to keep the plunger moist continuously with a 6 to 10 per cent solution of sodium citrate. The plunger is hollow and its handle is detachable. The interior of the plunger, which holds about 2 cc. of fluid, is filled with the solution of sodium citrate. When the plunger is moved back and forth, some of this solution escapes through perforations on the sides of the plunger, and these minute quantities prevent coagulation of the blood. The other parts of the transfusion apparatus are like those which are in general use. The author asserts that with his instrument it is possible to transfuse up to 400 cc. of blood without interruption.

Medizinische Klinik, Berlin

25: 1651-1686 (Oct. 25) 1929

Detection of Causes of Leukorrhea. Benthin.—p. 1651.
Prognosis in Renal Diseases. S. Litzner.—p. 1654.
*Prognosis and Treatment in Burns. C. Kreibich.—p. 1656.
*Streptococci in Pathogenesis of Scarlet Fever: Therapeutic Value of Streptococcal Scarlet Fever Serum. F. Reiche.—p. 1657.
*Influence of Single Large Dose of Amidopyrine on Postinfectious Subfebrile Temperature. O. Weltmann.—p. 1659.
*Prevention of Postoperative Thrombosis and Embolism by Administration of Thyroxin. H. L. Popper.—p. 1660.
Clinical Aspect and Treatment of Myositis Ossificans Progressiva. F. Hirsch and A. Löw-Beer.—p. 1661.
Symptomatology in Cervical Ribs. J. Kretz.—p. 1664.
Successful Artificial Pneumothorax on Right Side After Unsuccessful Pneumothorax, Phrenicus Exeresis and Thoracoplasty on Left Side. H. Maendl.—p. 1664.
Renal Threshold for Sugar in Normal and in Diabetic Patients. F. Klein.—p. 1665.
Causes, Symptomatology and Treatment of Various Forms of Rhinitis. L. B. Seiferth.—p. 1667. C'td.
Gonorrhea: Frequency, Diagnosis, Bacteriology, Complications and Prophylaxis. A. Buschke and L. Loewenstein.—p. 1669. C'td.
Possibility of Immunization Against Tuberculosis with Nonbacillary Lipoid. F. Mattausch.—p. 1671.

Prognosis and Treatment in Burns.—Kreibich states that death from burns is the result of poisoning. The coagulated protein has a toxic effect. The prognosis in a case of burn is determined by the size of the area and also by the degree of tissue destruction. The author distinguishes five degrees of burning; namely, erythema, formation of blister, necrosis of the upper portion of the papillae of the corium, necrosis of the entire papillary layer, and carbonization. The third and fourth degree burns have the greatest toxicity because the scab is soft and consequently the poisonous substances are easily absorbed. In the fifth degree the danger of poisonous intoxication is somewhat less because in carbonization the crust is dry and the toxins are not so easily absorbed. In the third, fourth and fifth degree burns death is likely to result even if only minor portions of the body are affected. A fourth degree burn extending over one eighth of the body surface may cause death, whereas a second degree burn may cover one third of the entire surface and yet the patient may recover. In the treatment of burns one should attempt to remove the toxins from the body. Some authors advise blood transfusion. However, the author recommends infusions with solutions of sodium chloride. He describes the case of a patient in whom one fourth of the body surface was destroyed by third and fourth degree burns. The patient recovered after the intravenous administration of a solution of sodium chloride by means of continuous drop infusion.

Streptococci in Pathogenesis of Scarlet Fever: Therapeutic Value of Streptococcal Scarlet Fever Serum.—Reiche points out that the good results gained with antitoxic streptococcal serum prove that toxins of the streptococci play an important part even in the early stages of scarlet fever. The author considers the streptococci not as the primary pathogenic agent of scarlet fever but rather as a secondary manifestation that is activated by the invisible scarlet fever virus.

Influence of Single Large Dose of Amidopyrine on Postinfectious Subfebrile Temperature.—Weltmann reports three cases in which postinfectious subfebrile temperature was counteracted by a single large dose of amidopyrine. The patients were given 1 Gm. The fact that the temperature was reduced and did not increase again shows that an infectious process was

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no longer present. Because a single dose was sufficient to counteract the subfebrile temperature, the author assumes that probably a slight disturbance existed in the mechanism of the regulation of the temperature. The following are the conclusions that the author draws from his observations: The administration of a large dose of amidopyrine not only counteracts postinfectious high temperatures but also indicates the cause. If after the administration of a large dose of amidopyrine the temperature first subsides but later increases again, it is evident that an infection is the cause of the fever. If the temperature sinks and does not rise again, an infection no longer exists. Whenever the subfebrile temperature cannot be influenced by the administration of amidopyrine, a constitutional hyperthermia may be assumed.

Prevention of Postoperative Thrombosis and Embolism by Administration of Thyroxin.—Popper points out that thrombosis and embolism are more frequent in one group of diseases than in others, that they occur oftener in women than in men, that in young persons they are extraordinarily rare, and that they almost never occur after strumectomy. From these observations the author concludes that disturbances in the internal secretions, especially a hypofunction of the thyroid, may be of influence on the development of postoperative thrombosis and embolism. It has been demonstrated in experiments on animals that medication with thyroxin hinders the development of thrombi. The author further reviews reports of other authorities who observed a decrease in the number of postoperative thromboses and embolisms after the prophylactic administration of thyroxin. He then describes his own observations. One hundred and fifty patients who underwent operations for hernia, appendicitis, or disorders of the stomach or of the biliary system were given 1 mg. of thyroxin three times daily until their recovery was so far advanced that they could walk. Another group of 150 patients who had received surgical treatment for similar disturbances received no prophylactic treatment. Of the patients who had received thyroxin, one died of pulmonary embolism and three developed thrombophlebitis. Among the patients to whom no thyroxin had been administered, there were four who developed thrombophlebitis. Embolism or pulmonary infarct did not occur. On the basis of these observations the author concludes that thyroxin does not prevent thrombosis and embolism.

Monatsschrift für Kinderheilkunde, Leipzig

45: 97-192 (Oct.) 1929

Dosage of Viosterol. W. Catel.—p. 97.
*Etiology of Congenital Stridor. C. Bagg.—p. 102.
*Elimination of Excess Vitamin D. F. Hepner.—p. 116.
Pathologic Changes in Pneumonia in Nurslings. P. Heim.—p. 119.
*Osteo-Arthropathy in Bronchopneumonia. J. C. Schippers.—p. 130.
*Pneumonia in Nurslings. R. Neumann and H. Happe.—p. 141.
Endemic of Infectious Erythema. A. Siwe.—p. 152.

Etiology of Congenital Stridor.—Bagg gives the case reports of seven personally observed cases of congenital stridor and lists the causes of the condition thus: deformity of the epiglottis, micrognathia, macroglossia, a tumor of the esophagus that compresses the trachea, submucous abscess of the larynx, tonsillitis, glossitis, ulcerative laryngitis, hyperplastic thymus and goiter. She emphasizes the fact that the conception of congenital stridor as a disease entity does not correspond to the observations made in this condition.

Modes of Elimination of Excess Vitamin D.—In experiments in animals Hepner noted that excess vitamin D was not excreted in the urine. During lactation some of it was excreted in the milk. Most of the excess vitamin D, however, was eliminated in the bile.

Osteo-Arthropathy in Bronchopneumonia. — Schippers reports a case of severe bronchopneumonia lasting five months in an infant, aged 2 years; three and one-half months after the onset of the bronchopneumonia a painful swelling of both hands was noted. Roentgen examination revealed a symmetrical periostitis of the second, third and fourth metacarpal bones. In addition a prolonged painfulness of the cervical muscles was noted; roentgen examination did not reveal any pathologic changes as a basis for the painfulness in this region. Shortly after the patient recovered from the pneumonia the changes in the soft parts disappeared and this was followed by the healing of the periostitis.

Bacteriology and Specific Prophylaxis of Pneumonia in Nurslings.—In twenty-one cases of pneumonia in nurslings Neumann and Happe isolated the following micro-organisms: pneumococci nine times, staphylococci eight times (twice with definite hemolysis) and streptococci four times (three times with definite hemolysis). In the vaccination of nurslings against pneumonia he used a vaccine containing 200 million killed type I pneumococci. The strain of pneumococci used was obtained by puncture from the lung of a nursling with bronchopneumonia. At first 150 million micro-organisms were injected subcutaneously in three doses; later 250 million were injected in one dose of 50 million and two doses of 100 million. The injections were made at intervals of seven days. With the exception of an occasional transient infiltrate, untoward effects were not observed. Of 322 hospitalized children who were not vaccinated, bronchopneumonia developed in thirty-four (10.5 per cent), whereas in 128 children in the same hospital who were vaccinated it developed in only eight (6.2 per cent). The authors attribute the unsatisfactory results obtained by other investigators in the prevention of pneumonia in nurslings by means of vaccination to too small doses of vaccine.

Münchener medizinische Wochenschrift, Munich

76: 1827-1866 (Nov. 1) 1929

Biologic Principles in Surgery. H. von Seemen.—p. 1827.
Experiences with Desensitization Treatment in Hay-Fever During 1929. M. J. Gutmann.—p. 1830.
*Determination of Recovery from Scarlet Fever by Bacteriologic Examination and by Clinical Observation. O. Klingberg.—p. 1833.
*Influence of Gymnastics on Female Constitution, on Menstruation and on Childbirth. E. Düntzer and M. Hellendall.—p. 1835.
Development and Value of "Subaqual" Intestinal Bath. Olpp.—p. 1838.
Therapeutic and Diagnostic Use of Dilute Solution of Iodized Sesame Oil. H. Winternitz and V. Schenck.—p. 1840.
Acid and Alkaline Diets in Practical Therapy. C. Kroetz.—p. 1842. C'en.
Peroral Administration of Insulin. P. Freud.—p. 1846.
Pharmacology of Popular Medicine. L. Kroeber.—p. 1846.

Determination of Recovery from Scarlet Fever.—Klingberg points out that the length of time for which convalescent scarlet fever patients should be isolated in order to prevent communication of the disease to others is determined either by bacteriologic examination or by clinical observation. He investigated 184 cases in which the recovery had been determined by bacteriologic tests, and 235 cases in which the patients had been discharged on the basis of the clinical signs of recovery. In both groups there were patients who, after their return home, communicated scarlet fever to others. The author thinks that the specificity of hemolytic streptococci is not sufficiently clear to make them the basis of medical regulations. He comes to the conclusion that, from the epidemiologic point of view, the presence of hemolytic streptococci during convalescence is no motive for prolonging the isolation of the patient. Even if the hemolytic streptococci cannot be demonstrated, the danger of contagion is not always excluded. The clinical control is likewise not absolutely dependable. The author thinks that a quarantine lasting eight weeks would guard against contagion. However, under ordinary conditions this prolonged isolation cannot be put into practice.

Influence of Gymnastics on Female Constitution, on Menstruation and on Childbirth.—Düntzer and Hellendall gathered information from 1,500 female participants in a gymnastic contest. The ages of the women ranged between 15 and 38. Classification into four constitutional types showed that the largest number belonged to the muscular type; then followed the respiratory, the cerebral and the gastric types. Pelvimetry revealed that the majority of these highly trained women had comparatively small pelves. However, the authors point out that this is not the result of the bodily exercises but is rather due to the fact that women who are interested in athletics are usually not of the type that have a large pelvis. The majority of the women who had given birth stated that during pregnancy they had continued at least the lighter forms of exercise. Some of them had discontinued their gymnastics during the later months of gravidity, whereas others continued them to the end. The confinement had been easy in all cases except one. In the latter instance a complication had developed, which, however, had not been caused by the exercises. The authors further discuss the influence of gymnastics on men-

struation. They give tabular reports showing that the majority of women continued their exercises during the menstrual period. The others discontinued the training either partly or entirely. Concerning the quality of the gymnastic work during the menstrual period, it is stated that in more than 61 per cent it was either the same as or better than usual, whereas in others the efficiency was somewhat reduced. Another table shows how much the menstruation was influenced, either favorably or unfavorably. The majority of the women who reported unfavorable effects stated that the harmful effects could be traced to strenuous exertion. The authors also direct attention to the effect of unusual thermic influences. Some women stated that their menstruation became more painful when outdoor exercises were performed on cold days. It was also observed that, of fifty women who suffered a heat stroke during a gymnastic festival, twenty-five were in the menstrual period. The authors come to the conclusion that a healthy woman who is accustomed to exercises may continue gymnastics and sports during menstruation. They state, however, that on the day before menstruation the exercises should be somewhat limited. On especially hot or cold days, strenuous outdoor activities should be avoided. The establishment of records should not be attempted during menstruation.

Wiener klinische Wochenschrift, Vienna

42: 1365-1396 (Oct. 24) 1929

Diatheses During Childhood. A. Reuss.—p. 1365. C'td.
Myxomatous Adenofibrochondrolipoma of Lung. A. Matras.—p. 1369.
New Improved Technic for Making Microscopic Blood Preparations. A. K. J. Koumans.—p. 1372.
*Difficulty of Differential Diagnosis of Myeloma. A. Fessler and R. Pohl. —p. 1376.
*Sterility: Its Causes, Diagnosis and Treatment. E. Graff.—p. 1378.
Clinical Significance of Malformations of Kidney. K. Haslinger.—p. 1380. C'td.
Prophylaxis of Infectious Diseases. H. Mautner.—p. 1383.
Best Method for Extermination of Insects in Dwellings. M. Eugling. —p. 1385.

Difficulty of Differential Diagnosis of Myeloma.—Fessler and Pohl report the case of a man, aged 74. Seven months before the patient came to the hospital he had first noticed an oval shaped opening in the cranium but he could give no explanation for its development. The condition was not painful, but because the opening grew steadily larger, the patient asked medical advice. He was in good general condition. On the top of the head a protrusion of the scalp was noted. It covered an area of 5 by 4 cm. Pulsation was plainly perceptible. The rim of the opening in the bone was sharp edged and in parts it showed wall-like protrusions. The condition was diagnosed as syphilitic gumma of the periosteum and of the bone. The symptomless development as well as a positive Wassermann reaction corroborated this diagnosis. However, the patient stated that he had never had syphilitic infection and he showed no other signs of syphilis. Antisyphilitic treatment was begun, but it had no influence on the condition. Roentgenoscopy revealed several smaller defects in the more basal portions of the cranium. This observation and the failure of the antisyphilitic treatment led the authors to assume the existence of an occult carcinoma with osteoclastic metastases. The opening in the cranium steadily increased in size. The patient had severe headaches and frequent attacks of dizziness. He vomited, had pains in the abdomen, was often confused and became cachectic. Repeated roentgenoscopy showed, besides the defects in the cranium, defects also in the left clavicle and in the sixth rib on the right side. Several weeks later the patient died. The necropsy revealed a round, soft grayish red tumor in the posterior part of the vault of the cranium. The tumor had a diameter of 5 cm. The sternum, the left clavicle, several ribs and several vertebrae showed areas of disintegration of the substantia spongiosa, and the marrow was replaced by tumorous masses that were of the same structure as the tumor in the cranium. The disease was now recognized as myeloma. This case shows that an overestimation of a symptom or of a diagnostic method should be avoided. Only careful observation and the equal evaluation of all symptoms can lead to a correct diagnosis, especially in atypical cases of myeloma.

Sterility: Its Causes, Diagnosis and Treatment.—Graff points out that in recent years sterility has greatly increased. He thinks that this is mainly due to interruption of pregnancy, because abortion often has a harmful effect on the capacity for conception. However, the knowledge concerning the causes and treatment of sterility has likewise increased. The insufflation of the uterine tubes in particular has proved valuable in the diagnosis, prognosis and treatment of sterility. In the diagnosis of sterility the determination of the potentia generandi of the husband should not be neglected. In the female the author differentiates between primary and secondary sterility. Of the two main causes of sterility in women—namely, hypoplasia of the genital organs and inflammatory changes—the first is especially the cause of primary sterility. In many cases hypoplasia and inflammations concur. The author further describes the symptomatology of hypoplasia of the genitalia. Concerning the therapy he says that most methods of surgical treatment are contraindicated. The only operation that sometimes proves effective is discission of the posterior lip of the cervix. The most effective therapeutic methods are those which aim at a development of the hypoplastic organs. In minor degrees of hypoplasia mud-baths, treatments with hot air or diathermy, bathing in radioactive waters and the administration of extracts from the ovaries, from the thyroid or from the anterior lobe of the hypophysis have proved effective. Since the introduction of the insufflation method, it has been recognized that most cases of sterility result from inflammations of the genitalia. The author asserts that the prognosis is unfavorable in most cases with inflammatory processes. Misplacement of the uterus is another frequent cause of sterility. Retroflexion of the uterus is usually corrected by operative treatment. Secondary sterility is in many instances the result of interruption of pregnancy. The author thinks that curettage and the application of tincture of iodine is the cause of sterility in such cases. He states, therefore, that curettage should not be done with a sharp curet and that the application of iodine should be avoided. In the discussion of the therapeutic value of insufflation it is stated that, if no obstruction exists, pregnancy develops in about 15 per cent of the cases. Frequently an existing obstruction is eliminated by insufflation. About one third of these women become pregnant shortly afterward. Of other factors that have proved helpful in overcoming sterility the author mentions change of surroundings and of climate, the use of radioactive waters, the application of small amounts of extracts of thyroid and the discontinuation of sexual intercourse for longer periods.

Zeitschrift f. d. ges. Neurol. u. Psychiatrie, Berlin

121: 1-322 (Aug. 6) 1929

Toxic Effect of Mercury Compounds. W. Guiljarowsky and A. Winokuroff.—p. 1.
Stretching of Muscles: Phenomenon of Sudden Inhibition. J. C. McKinley and K. Wachholder.—p. 24.
Thought Content and Aphasia. R. Klein.—p. 36.
Multiple Sclerosis and Occupation. E. Koch.—p. 71.
Examination of Cerebrospinal Fluid by Means of Emanuel-Rosenfeld Lumbar Test Reaction. W. Schmitt.—p. 92.
Disease with Psychic Disturbances Resembling Those in Amyotrophic Lateral Sclerosis. A. Meyer.—p. 107.
Sympathetic Nervous System in Relation to Sensitivity. O. Foerster, H. Altenburger and F. W. Kroll.—p. 139.
Metencephalitic Psychoses Resembling Dementia Praecox. J. Wyrsch.—p. 186.
Psychotherapy in Dementia Praecox. E. Kretschmer.—p. 211.
Hydrocephalus: Topography of Cisterna Cerebromedullaris. A. Dietrich. —p. 224.
Compulsion Neurosis. E. Wexberg.—p. 236.
*Blood Picture in Paresis with Especial Regard to Leukocyte Count Before and After Malaria Inoculation. A. Stender.—p. 255.
*Diagnostic Value of Takata-Ara Colloid Reaction. E. Blum.—p. 273.
Discordant Uniovular Twins. H. Burkhardt.—p. 277.
Cerebrospinal Fluid: Nitrogen and Protein Contents. F. Halpern.—p. 283.
Basal Metabolism and Specific Dynamic Action in Neuroses. R. Exner. —p. 308.

Blood Picture in Paresis with Especial Regard to Leukocyte Count Before and After Malaria Inoculation.—On the basis of a review of the literature and his personal experience in forty-five patients with paresis in whom blood counts were made, Stender concludes that treatment with neoarsphenamine does not have any influence on the blood picture. However, malariotherapy restored the preexisting lymphopenia in one third of the cases to a normal count. In the other patients having a normal or an increased number of leukocytes, malariotherapy caused a slight leukocytosis, which was followed by a normal count in cases also showing clinical improve-

ment. According to Stender, the occurrence of either lymphocytosis or lymphopenia after malariotherapy is prognostically unfavorable.

Diagnostic Value of Takata-Ara Colloid Reaction.—Blum states that on the basis of his personal experience in 900 cases and the results obtained in 2,000 cases from a review of the literature, this test is a valuable asset for serologic diagnosis. One of the advantages of the method is the low cost of the necessary reagents.

Zeitschrift für klinische Medizin, Berlin

111: 147-302 (Sept. 12) 1929

Lithiasis and Lipomatosis of Pancreas. L. d'Antona.—p. 147.
Uric Acid Content of Blood and Tissue Juice. G. Scherk.—p. 167.
Polarization Capacity of Skin. P. Peschkowsky.—p. 179.
Respiratory Metabolism Method in Measured Muscular Work. D. E. Rosenblum.—p. 191.
Constancy of Basal Metabolism. D. E. Rosenbium.—p. 198.
Changes in Physicochemical Properties and in Sedimentation Rate of Blood at High Altitudes. W. Schemensky.—p. 205.
Basal Metabolism in Leukemia. K. Stüber.—p. 214.
*Total Quantity of Blood in Infectious Diseases. W. Grunke.—p. 233.
Disturbances in Sympathetic Nervous System in Persons with Thyrotic and "Tetanoid" Constitutions. E. Blumenfeldt and H. Köhler.—p. 250.
Toxic-Degenerative Changes in Leukocytes in Various Pathologic Conditions. I. Barta.—p. 268.
*Effect of Liver Diet on Healthy Organism. K. Neidhardt and K. Bannasch.—p. 292.

Total Quantity of Blood in Scarlet Fever, Typhoid and Erysipelas.—Using Olivecrona's modification of the method of Keith, Rowntree and Geraghty, Grunke determined the total quantity of blood both during the course of the infection and during the period of convalescence in sixteen patients with scarlet fever, eleven with typhoid and twelve with erysipelas. In none of these conditions was he able to demonstrate a relation between the total volume of blood and the frequency and quality of the pulse, the blood pressure, the body temperature and the nature or intensity of the local manifestations of the disease. He did note, however, that in the severe cases of scarlet fever and typhoid there was almost always a decrease in the total quantity of blood. The decrease indicated a circulatory disturbance in the capillary system and was present before the usual clinical symptoms of disturbed cardiovascular functioning appeared.

Effect of Liver Diet on Healthy Organism.—Neidhardt and Bannasch administered 500 Gm. of raw or fried liver daily to eight healthy young men for a period of from twelve to thirty-two days. At the same time the ingestion of fats was limited and foods rich in vitamins were administered. The ingestion of substances that injure the liver, particularly alcohol, was forbidden and the men were made to lead a regular life and to avoid strenuous bodily exertion. Before the liver diet was begun they were examined clinically and hematologically. The authors noted that even in healthy persons the ingestion of liver produces a definite increase in the number of erythrocytes and a definite but less marked increase in the hemoglobin content of the blood.

Zeitschrift für Krebsforschung, Berlin

29: 549-678 (Sept. 6) 1929

*Production of Tumors with Blood from Animals with Tumors. F. Blumenthal.—p. 549.
Microscopic Picture in Round Cell Sarcoma. B. Lipschütz.—p. 554.
Microscopic Picture in Nevocarcinoma. B. Lipschütz.—p. 564.
Malignant Tumors: Treatment with Naphthylpararosaniline. R. Roosen.—p. 571.
Reaction of Peritumoral Connective Tissue. G. Wallbach.—p. 577.
*Cancer in Young Persons. H. Junghanns.—p. 623.
Gas Treatment of Malignant Tumors. H. G. Jacubson.—p. 665.

Production of Tumors with Blood from Animals with Tumors.—Blumenthal describes three series of experiments in which he produced tumors in mice at the point of injection of blood from mice with various kinds of sarcoma and cancer. Contrary to his former point of view he now believes that either the tumor cells circulate in the blood or the tumor agent is liberated by the disintegration of the tumor cells or attaches itself to something (erythrocytes, leukocytes, protein colloids) and is transported through the body.

Cancer in Young Persons.—Junghanns states that of 4,192 cancers that were found in 36,408 necropsies, six occurred in persons (two males and four females) aged less than 20 years.

Zeitschrift für urologische Chirurgie, Berlin

28: 165-364 (Sept. 21) 1929

Changes in Parenchyma of Kidney at a Distance from Renal Tumors and from Lesions of Renal Tuberculosis. N. I. Kukudschanow.—p. 165.
Changes in Neck of Bladder in Tabes. L. Fessler and F. Fuchs.—p. 175.
Polycystic Degeneration of Kidneys. I. M. Talman.—p. 180.
*Perineal Prostatectomy. H. Wildbolz.—p. 224.
*Vasectomy in Hypertrophy of Prostate. L. Dunajewsky and I. Tjomkin.—p. 244.
Unilateral Displaced Kidney. B. A. Schmuckler.—p. 252.
Kidney Function Tests. J. Minder.—p. 258.
Hypoplasia of Kidneys. H. Schmutte.—p. 284.
Physiology of Sphincter Muscle of Bladder. Portwich.—p. 294.
Surgical Treatment of Nephritis. G. von Illyés.—p. 298.
Reflex Anuria. Y. Osawa.—p. 315.
*Hemostasis in Nephrotomy. E. Kornitzer and E. von Teltscher.—p. 329.

Perineal Prostatectomy.—Wildbolz gives an illustrated description of the technic of perineal prostatectomy. He enumerates the advantages of perineal prostatectomy over suprapubic prostatectomy and states that he uses the latter operation only in cases in which the pelvic outlet is abnormally narrow (if the ascending rami of the ischia at the level of the posterior attachment of the scrotum are separated by a distance of less than two fingerbreadths) and in cases in which, in addition to hypertrophy of the prostate, there is a bladder condition (diverticulum or tumor) that would necessitate a suprapubic incision of the bladder.

Factors Influencing Results in Treatment of Hypertrophy of Prostate by Vasectomy.—Dunajewsky and Tjomkin do not agree with other authors who maintain that the results of vasectomy in hypertrophy of the prostate depend on the consistency of the prostate at the time the operation is performed. They believe that the most important factor in the results following the operation is the stage of the disease at which the operation is performed; the more the disease has been neglected and the more marked the atony of the bladder has become, the less satisfactory are the results of vasectomy.

Hemostasis in Nephrotomy.—In seventeen nephrotomies performed on rabbits, Kornitzer and von Teltscher noted that in all incisions in the kidney, regardless of whether the organ was healthy or showed pathologic changes, when the edges of the wound were held together under light pressure for a few minutes (never more than four and one-half) they always adhered. Cross-sections of the kidneys removed a few days after the nephrotomy always showed an almost linear scar. On the basis of their observations the authors suggest that, in all nephrotomies in which the hemorrhage can be stopped by compression of the edges of the wound, other methods of hemostasis should not be used.

Zentralblatt für Chirurgie, Leipzig

56: 2625-2688 (Oct. 19) 1929

Congenital Tracheobronchial Cysts of Lung. E. Melchior.—p. 2626.
*Bone Suture by Means of Putti-Parham Metal Band. T. Fohl.—p. 2631.
Local Anesthesia by Means of Percaine. E. Eichhoff.—p. 2638.
Liver Abscess or Liver Echinococcus Differential Diagnosis. A. Oberniedermayr.—p. 2641.
Treatment of Hypertrophy of Prostate by Payr's Method. S. Heffheinz.—p. 2645.
Case of Generalized Osteitis Fibrosa Without Tumor of Parathyroids. H. Winter.—p. 2647.
Anesthesia: Wire and Rubber Mask. R. Sommer.—p. 2649.

Use of Putti-Parham Metal Band in Bone Surgery.—Fohl endorses the use of this band in the treatment of fractures. Its action as a foreign body may be disregarded entirely; in fact, it is exceedingly slight. In the event that infection supervenes, the band is easily removed. It does not interfere with consolidation, and pseudo-arthroses are avoided because of the high degree of immobilization of the fragments.

Zentralblatt für Gynäkologie, Leipzig

53: 2257-2320 (Sept. 7) 1929

*Demonstration of Lipoids in Corpus Luteum. A. Hermstein.—p. 2258.
Treatment of Puerperal Pyemia. H. Hinselmann.—p. 2264.
*Simultaneous Ovarian and Intra-Uterine Pregnancies. G. Schubert.—p. 2268.
*Incidence of Eclampsia. H. Sachs.—p. 2275.
Vaginal Extirpation of Uterus. S. von Tóth.—p. 2279.
*Meningitis in the New-Born. N. Köhler.—p. 2291.
*Induction of Labor. J. Voigt.—p. 2294.

Demonstration of Lipoids in Corpus Luteum.—On the basis of a comparative study of eleven corpora lutea, Hermstein

states that the tinctorial method for the demonstration of lipoids in a corpus luteum is much less reliable than the chemical method.

Simultaneous Ovarian and Intra-Uterine Pregnancies.—Schubert reports the case of a woman, aged 26, in whom, two months after a normal delivery, an ovarian tumor containing a papyraceous fetus of four months was removed at operation.

Incidence of Eclampsia.—Sachs points out the increased incidence of eclampsia following sudden changes in the weather. He believes that at such times gravidas should be observed carefully for signs of preeclampsia.

Meningitis in the New-Born.—Köhler reports two cases of meningitis in the new-born. He states that if postmortem examinations were performed regularly in the new-born, many unclear cases of death in new-born infants with cerebral symptoms would be explained by the finding of the pathologic changes characteristic of meningitis.

Induction of Labor.—Voigt is opposed to the use of pituitary extract to induce labor or intensify the uterine contractions in labor. He states that the contractions produced by this drug do not begin gradually but appear suddenly and frequently last much longer than a normal contraction. This tetanic condition of the uterus is extremely painful and imperils the life of the fetus. For these reasons the author discontinued the use of pituitary extract and is now using a colpeurynter to induce labor and to intensify weak uterine contractions during labor. He has found the Braun colpeurynter less satisfactory than the conical inelastic colpeurynter.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

73: 4973-5072 (Oct. 26) 1929

Excellent Advice for Writers of Scientific Articles. G. van Rijnberk. —p. 4974.
Traumatic Bleeding in Cerebrum. B. Brouwer.—p. 4978.
*Phrenicectomy as an Independent Operation in Treatment of Pulmonary Tuberculosis. F. N. Sickenga.—p. 4985.
Value of Antimony Electrodes for Measurement of Hydrogen Ion Concentration. R. Brinkman.—p. 5000.
Myasthenia Gravis. A. Querido.—p. 5004.
Cause of Alastrim Epidemic at Rotterdam. J. Sanders.—p. 5010.

Phrenicectomy as an Independent Operation in Treatment of Pulmonary Tuberculosis.—Sickenga reaches the conclusion that phrenicectomy as an independent operation is a new and useful remedy in pulmonary tuberculosis, but with a very limited range of application. The operation should be followed by sufficiently long rest treatment, preferably in a sanatorium. In cases with cavities in the lower lobe, in the immediate vicinity of the diaphragm, phrenicectomy deserves without doubt the preference over treatment with pneumothorax.

Finska Läkaresallskapets Handlingar, Helsingfors

71: 765-869 (Oct.) 1929

Xanthomatosis with Skeletal Changes and Splenomegaly with Presence of Large Cells. F. Henschen.—p. 765.
Development of Human Blood Types. O. Thomsen.—p. 786.
*Iso-Agglutination Phenomenon from Anthropologic Point of View. O. Streng.—p. 805.
*Distribution of Blood Groups Among the Well and the Sick. O. Sievers. —p. 836.
*Pernicious Anemia and Tuberculosis. E. Qvarnström.—p. 849.
Technic in Gastro-Enterostomy. H. Bardy.—p. 856.

Iso-Agglutination Phenomenon from Anthropologic Point of View.—Streng advocates continued research in this field, while cautioning against certain possibilities of error in research and in the collection of material. He is convinced of the importance of the distribution of blood groups in explanation of anthropologic questions. The significance of pathologic conditions is as yet much less clear.

Distribution of Blood Groups Among the Well and the Sick in Material Collected in Finland.—The results of Sievers' investigations in a total material of 6,726 sick and 10,647 well persons fail to support the assumption of certain relations between disease and the blood group.

Pernicious Anemia and Tuberculosis.—In Qvarnström's opinion, the only conclusion to be drawn at present is that tuberculosis should not be numbered among the factors usually leading to pernicious anemia and that pernicious anemia does not promote the development of an accompanying tuberculosis.

Hygiea, Stockholm

91: 673-704 (Oct. 15) 1929

*Treatment of Congenital Syphilis with So-Called Inoculation Malaria. G. Åhman.—p. 678.

Treatment of Congenital Syphilis with So-Called Inoculation Malaria.—Åhman made forty inoculations in thirty-six cases, mostly refractory and unfavorable in prognosis. The results seem to him to encourage continued attempts on a larger scale.

Svenska Läkaresällskapets Handlingar, Stockholm

55: 49-63, 1929

Physician's Recollections of and Experiences During Twenty Years' Practice in Massage. F. Lindskog.—p. 49.
*Immunity Against Malignant Edema, Gas Gangrene and Symptomatic Anthrax. A. Pettersson.—p. 52.

Immunity Against Malignant Edema, Gas Gangrene and Symptomatic Anthrax.—Pettersson states that the microorganisms causing malignant edema, gas gangrene and symptomatic anthrax are influenced by the β-lysins of the body fluids (bacteriolytic substances of the body fluids more resistant to heat than the alexins), and in immunization with them bacteriolytic amboceptors are not formed. With the exception of *B. novyi*, the bacteria studied do not produce new immune bodies promoting phagocytosis. Agglutinins are formed. The leukocytes do not have a bactericidal action on these bacteria, and their absence at the site of infection does not play a part in development of the infection. The edema formation due to the bacterial toxins, however, plays an important rôle by creating a medium in which the bacteria develop easily.

Ugeskrift for Læger, Copenhagen

91: 905-932 (Oct. 24) 1929

*Campaign Against Rheumatic Arthritis. E. Nyrop.—p. 905.
*Polyneuritis of Pregnancy. K. Bierring.—p. 914.
Scarlet Fever Epidemic in Thorshavn. H. Heerup.—p. 916.
*Bismuth Infarcts and Their Prevention. S. Lomholt.—p. 921.

Campaign Against Rheumatic Arthritis.—Nyrop reviews the important research now being carried on in the field of rheumatic disorders, chiefly on the basis of the work done in the Deutsche Gesellschaft für Rheumabekämpfung.

Polyneuritis of Pregnancy.—Bierring describes a typical, grave case observed by him throughout its course and deviating from the so-called idiopathic polyneuritis only by the presence of vomiting, jaundice and psychic disturbances with loss of memory. He says that polyneuritis of pregnancy is as a rule characterized by the following three stages: (1) emesis, often with icterus, (2) psychoses with amnesia and paresis and (3) the end-stage with results of the pareses, and holds it to be due to an intoxication of pregnancy. He would therefore interrupt pregnancy as soon as the diagnosis is made.

Bismuth Infarcts and Their Prevention.—Lomholt found in the literature from 1924 to 1928 fifty cases of bismuth infarcts in the buttocks following intramuscular injection. He describes the nine cases observed by him in about 20,000 injections; there was no permanent infiltration. In addition to care that after insertion of the cannula blood is not aspirated into the tube, he advocates a slow, slight withdrawal of the cannula during injection to lessen the danger of fluid containing bismuth being forced into a lacerated blood vessel.

91: 933-960 (Oct. 31) 1929

*Laboratory Infection with Scarlet Fever. O. Moltke and K. A. Poulsen. —p. 944.

Laboratory Infection with Scarlet Fever.—In each of the instances reported by Moltke and Poulsen the infection is ascribed to the patient's work with hemolytic streptococci from scarlet fever patients. In the one, with a history of a negative Dick reaction a year earlier, infection is believed to have been caused by a wound in the finger, from which hemolytic streptococci were cultivated. These streptococci, after cutaneous reaction in fourteen persons, were found to be identical with one of the ten strains of streptococci with which the patient had been working. In view of the considerable differences apparently existing between filtrates of different scarlet fever streptococci, the authors consider the value of the Dick reaction in its present form problematic as an expression of immunity in scarlet fever.

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